

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 717.—Vol. XIX.]

LONDON, SATURDAY, MAY 19, 1849.

[PRICE 6D.]

Stannaries of Cornwall.—In the Vice-Warden's Court.

PURSUANT to a DECREE of the VICE-WARDEN'S COURT, made in the cause of "Fox and others against Elery," the creditors, in respect of TREVOLLOCK MINE, in the parish of ST. COLUMB MINOR, within the said Stannaries, are, on or before the 30th day of May inst., to come in and PROVE their DEBTS before the Registrar of the said Court, at his office in Truro, or, in default thereof, they will be excluded the benefit of the said Decree.

Dated Registrar's Office, Truro, May 16, 1849.

EXTENSIVE IRON-WORKS FOR SALE.

UPSET PRICE FURTHER REDUCED TO £45,000.

TO BE SOLD, BY PUBLIC ROUP, within the Royal Exchange Sale Rooms, GLASGOW, upon Wednesday, the 13th day of June next, at One o'clock afternoon (if not previously disposed of by private bargain),

THE BLAIR IRON-WORKS,

belonging to the Ayrshire Iron Company, situated in the parish of Dalry and county of Ayr, including FIVE BLAST-FURNACES, with TWO BLOWING-ENGINES, fit for these and additional furnaces, manager and workmen's houses and store, together with a large extent of MINERAL FIELDS, held under most favourable leases, producing ironstone of the best qualities, Coal, Limestone, and Fire-clay, with Pits, Steam-Engines, and necessary appurtenances for carrying on the works on an extensive scale; also the adjoining MALLEABLE IRON-WORKS.

So far as erected—all having a connection with the Glasgow and Ayr Railway, and as more fully described in former advertisements.

There is a large stock of ironstone on the ground, which may be got at a valuation.

For particulars apply to Mr. Biggart, at the works; W. D. Stirling, Esq., 13, Change-alley, Birchin-lane, London; Mr. Watson, 32, or Mr. Brown, 35, St. Vincent-street, Glasgow.—Glasgow, May 10, 1849.

SALE OF MODUM BLUE COLOUR WORK, SMALT WORKS, AND COBALT MINES, IN NORWAY.

BY ORDER OF THE COURT OF BANKRUPTCY.

THE SALE of the PROPERTY belonging to the partnership called MODUM BLUE COLOUR WORKS, will be held at the GRANGE OF FOSSUM, in the parish of MODUM, Bailiwick Biskerud, Bishopric Christiania, in the kingdom of NORWAY,

ON WEDNESDAY, THE 20th OF JUNE, 1849,

AT ELEVEN O'CLOCK A.M.

Consisting of the BLUE COLOUR WORKS, MINES, BUILDINGS, LANDS, FORESTS, SAW AND CORN MILLS, as well as all IMMOVABLES belonging to the WORKS, besides all RIGHTS and PRIVILEGES belonging to it; also the ORES, HALF MANUFACTURED GOODS, and INVENTORY, being in STOCK at the WORKS, or ELSEWHERE DEPOSITED and MORTGAGED IN NORWAY.

THE STOCK of MANUFACTURED BLUE COLOURS (smalts) will be SOLD SEPARATELY.—The buyer acquires the claims of the works against the labourers and others.

The provisional notice of the Sale of the Modum Blue Colour Works appeared in this paper on the 24th April, with a short description of the property, and on the 12th May, with further particulars.

The conditions of sale will be lodged in due time.

Möllenhor, near Drammen, the 24th April, 1849. G. P. RASCH.

Inquiries may be addressed to Goodhall and Reeves, London.

VALUABLE MINE MATERIALS FOR SALE.

TO BE SOLD, BY PRIVATE CONTRACT, at NORTH

DARLINGTON MINE, in the parish of LUDGVAN, in the county of Cornwall,

ONE 60-INCH CYLINDER ENGINE, 10-foot stroke in the cylinder, and 8 feet in the shaft, with brass-lined condensing work, and two boilers, about 12 tons each—also,

ONE 20-IN. STEAM WHIM, with a cage & boiler, complete—all in excellent condition.

30 fathoms of 20-inch main-rope 18, 16, 15, and 12-in. plunger-poles

30 ditto 10 ditto 18, 15, 12, and 11-in. winders

50 ditto 10 ditto 18, 15, 12, and 11-in. winders

10 ditto 15 ditto 13, 12, and 9-inch working barrels

12 ditto 14 ditto 8 Pieces of 12-inch main-rod

57 ditto 11 ditto 8 Pairs fagotted strapping plates, 19 in.

22 ditto 11 ditto long, 3 in. wide, and 1½ in. thick

15 ditto 10 ditto 4 Pairs ditto 14 feet long, 6 inches wide,

6 ditto 8 ditto and 1½ inch thick

18, 16, and 14-inch H & top-rod-pieces

18, 16, 15, 13, and 12-inch stuffing-

boxes and glands

50 Pairs of common iron ditto, various

sizes

Flange bolts, about 40 cwts. of different lengths and sizes; rod pins, about 40 cwts.

of ditto; staples and glands, of various sizes; 18, 15, 12, and 9-inch box prongs and

brasses; 90 fathoms of 13½-inch capstan rope, nearly new; several pair of large caps and

hooks, sealings and valves, anvils, vices, smiths' and miners' tools, and a large quantity

of other useful materials.

For viewing the same, apply to the agent on the mine, on Tuesday and Thursday in

every week, from 10 A.M. until 4 P.M., until the same are disposed of.

Dated North Darlington Mine, 1st May, 1849.

TO BE SOLD (CHEAP), a 40-HORSE HIGH-PRESSURE

HORIZONTAL STEAM-ENGINE, quite new; cylinder 24 inches diameter, stroke

4 feet, mounted upon a strong metal box frame.—Apply to Mr. Matthew Smith, Sylvester

Works, Sheffield, where the engine may be seen.

CORNWALL.—TYWYNNHAILE MINES.

IMPORTANT AND VALUABLE COPPER MINES TO

BE LET, BY PRIVATE CONTRACT, comprising the extensive SETTS formerly

known as

UNITED HILLS, WHEEL CHARLES, and

SOUTH TOWN, WHEEL FANCY,

belonging to the Duchy of Cornwall, in the parish of SAINT AGNES.—These mines having been surrendered to the Duchy by the late lessees, during the extreme pressure of the latter part of the year 1847, have since been placed in good working order, and are yielding large and increasing returns. They are now to be leased, at a moderate rate of rent, for a term of 21 years.

An arrangement can be made for putting the lessees of the Tywynhaile Mines in possession of the adjoining sets of Wheel Sparrow, West Wheel Sparrow, Bassett's United Hills, Wheel Clarence, and Wheel Lydia, the property of the representatives of the late John Bassett, Esq.

Proposals will be received at the Duchy of Cornwall Office, Somerset House; and any further information may be obtained by application there, or to R. Taylor, Esq., Falmouth, Duchy of Cornwall, Somerset House, Feb. 20, 1849.

COAL MINES IN FLINTSHIRE.—The TRYDDYN

LODGE ESTATE TO BE SOLD, BY PRIVATE TREATY, OR LET ON LEASE.

It consists of about 70 acres of good LAND, all in a ring fence, a good and commodious

HOUSE, with a large GARDEN, COACH-HOUSE, STABLES, and all necessary and

complete FARM BUILDINGS; together with TWENTY-ONE STONE-BUILT COT-

TAGES for workmen, erected on the estate.

A good turnpike-road—that from Chester to Ruthin—passes through the property, and

a branch of the Mold Railway (which runs into the Chester and Holyhead Railway, and

is now about to open) will come within a quarter of a mile of the estate.

The Tryddyn Lodge Estate adjoins the Coed Talon Iron-Works and Coal-works. The

mines are wholly unworked; but closely adjoining workings at Coed Talon on the south

side, and those of the Frank Farm Colliery on the north side, fully warrant the conclu-

sion that all the seams of coal known in the district lie entire, and under most favourable

circumstances, throughout the whole extent of the Tryddyn Lodge lands, consisting of

at least nine workable seams of coal, of an aggregate thickness of 44 feet, within 150 yards

of the surface. These consist of the two-yard, Brassy, Main Coal, and those (below

are) of very superior quality, and in high esteem for house or smith's use, smelting,

or coking. It is also most satisfactorily concluded that several beds of ironstone, of very

excellent quality, lie entire under this property; four workings thereof form an aggregate

thickness of 40 inches.

Apply to Messrs. Harper and Parry Jones, solicitors, Whitechurch, Salop.

TENDERS FOR WELSH COAL AND NORWAY TIMBER.

TENDERS may be FORWARDED to ME, on or before the 1st proximo, for

SUPPLYING TWO THOUSAND TONS, more or less, as may be required, of

WELSH COAL,

of the best quality for Steam-Engines, to be DELIVERED at WEST CARADON, GO-

NAMENA, and WHEAL MARY CONGOL'S MINES, between Midsummer, 1849, and

Midsummer, 1850, in about equal quantities monthly, and so that the mines shall be

kept constantly supplied; in default of which, and also of the quality being the best, the

cost above the contract price of obtaining a supply elsewhere to be charged to the

contractors. The mode of payment to be by acceptance, at three months, from the times

(once in two months) of auditing the accounts.

TENDERS may also be FORWARDED to ME, on or before the 1st proximo, for SUP-

PLYING the following Mines—viz.: WEST CARADON, GONAMENA, CRADDOCK

MOOR, and WHEAL MARY CONGOL'S, for 12 months, from Midsummer next, with

NORWAY TIMBER,

half Dram and half Longwood, of good quality and average lengths, to be delivered at

the respective mines, in such quantities as may be required, and when required, and to

be charged at the measurement on which the duty has been paid.

Should the agents not approve of the quality of any timber sent in, the contractors to

remove the same, and, at the option of the respective adventurers, either replace it by

an article of approved quality, or submit to a reduction from their bills of the amount of

difference between the contract price and that at which the adventurers may obtain a

supply from some other party; also the amount of the like difference to be deducted

from the contractors' bills in respect of timber purchased elsewhere, in consequence of

the contractors not sending in supplies when and as required.

Payment for timber by acceptance at three months, as for coal above.

Any mine may be tendered for separately, and either for coal or timber.

Linkard, 1st of 6th month (May), 1849. EDWD. A. CROUCH,

IRON, HARDWARE, AND METAL TRADES' PENSION

SOCIETY.—SIXTH ELECTION.—A GENERAL MEETING of the members of the above society will be HELD at the London Tavern, Bishopsgate-street, on Monday, the 28th day of May, 1849, at half-past Twelve o'clock precisely, for the purpose of electing Four Men and Two Women, as additional pensioners, and for other business.

The poll will commence at One o'clock, and no polling paper can be received after Four o'clock.

67, Upper Thames-street, London, May 1, 1849.

JAMES BOYDELL, LAND, MINE, AND MACHINERY

VALUER, AND AGENT,

No. 34, THREADNEEDLE-STREET, LONDON,

HAS TO DISPOSE OF

A PATENT RIGHT for BUILDING VESSELS with IRON, on a principle which com-

bines increased strength with greater economy of manufacture.

Also, ONE for the CONSTRUCTION of IRON ROOFS, on a like principle. A spec-

imen of this may be seen as a roof covering one of the retort houses of the Birmingham

and Staffordshire Gas Company, by permission of Mr. CHIT, the engineer, at the works.

Also, ONE for IRON JOISTS and RAFTERS, and for a plan of joining large plates and

sheets of iron.

Also, ONE for the AMALGAMATION of STEEL and IRON—in the progress of the

manufacture of the latter, by which a great saving may be effected in the cost of making

edged tools.

THE LEASE of a very celebrated FOUNDRY and ENGINEERING ESTABLISHMENT

on the River Dee, complete, with fixtures, machinery and tools, in working order, and

ready for any parties to embark at once on building first-class iron steam-vessels, and

marine and locomotive engines.

The above will be found worthy the attention of any parties desiring to invest money

in a profitable business, as they will be disposed of upon terms which will ensure an un-

usual return to the purchasers of them.

Also, SOME COAL and IRONSTONE MINES, FREESTONE QUARRY, and a large

FREESTONE ESTATE.

Also, STEAM-ENGINES and MACHINERY, of all descriptions, and which he is em-

powered to offer at very moderate prices.

Also, SHARES in a well-known valuable SLATE QUARRY, in CARNARVONSHIRE.

Also, SHARES in, or the whole of, a GAS-WORK, which supplies exclusively a popu-

lar town in Shropshire, and which can be greatly extended.

Particulars of the above may be had, upon application, at 34, Threadneedle-street.

TO ENGINEERS, BUILDERS, AND ARCHITECTS.

JAMES BOYDELL, 34, THREADNEEDLE-STREET, having been a very large man-

ufacturer of machinery and irregular shaped iron, and having accomplished the rolling of

some descriptions of the latter, thought by many to have been impracticable, will be happy

to ASSIST any ENGINEERS, SHIPBUILDERS, and ARCHITECTS, in the planning of

the details of what IRONWORK they may have occasion for, or bringing to perfection

any invention in machinery, as well as procuring such materials for the purpose as they

may require.

VALLEY OF LOETSCHEN SILVER-LEAD MINING

AND SMELTING COMPANY.

OFFICES, 37, SOUTHAMPTON-STREET, STRAND.

In answer to an advertisement contained in the Mining Journal of the 12th inst., signed

"Boyet and John Hooker," proprietors, Mr. GUSTAVUS WILLIAM BLANCH BEGS

to inform the mining interest at large that the DEEDS of GRANT of the above MINES are

in his NAME and POSSESSION, and can be seen by all the parties interested in the un-

derstanding; and that the above-named gentlemen, who call themselves the proprietors, are

only shareholders, and not proprietors, as they erroneously call themselves. These deeds

grant "the preparatory works, buildings, sites for ores, and the contracts with the com-

munes for the wood necessary for the mines, smelting, and workmen, the produce of the

ores extracted, also the tools and materials." These deeds, dated 28th and 29th August,

1848, executed and registered at Paris, prescribe the number and price of the shares, at

which the prospectus, and concludes thus—"Pierre Baglion, Concessionaire of the

above-named mines, authorises Mr. Gustavus W. Blanch to put the mine into a company

by shares—no sign, and no money—only a right to a dividend on the profits."

The continued correspondence confirms these deeds, up to the present day, may be

seen, with the deeds, at the company's office, as also a letter from Mr. Hooker, dated

10th May, 1849, consenting to the formation of a public company in shares, reserving to

himself the disposal of his own interest, to be represented in the shape of shares—with

which disposal I do not pretend to interfere.

The advertisement referred to has, no doubt, proceeded from a recent visit to these mines

by Mr. Rippon and a Mr. Davies, and a prospectus has been issued, proceeding from

some nameless committee and nameless printer, and apparently without having any re-

sponsible head, seeking shareholders for one-half of these mines, under the pretence of

having concluded a bargain for an interest to that extent. My letters of the present

month, from Mr. Baglion, sen., the concessionaire, and from his son, deny the existence

of such bargain, which it is right the public should be aware of. The report of Mr. Rip-

pon on the mines and their produce fully confirms that of previous visitors. He says—

"On reaching the mines I found a vast quantity of ores already got, and on entering the

mine I found the appearance of an unlimited supply of ores."

G. W. BLANCH, Managing Director.

May 17, 1849.

LONDON, LIVERPOOL, AND DUBLIN COAL

CONSUMERS' COMPANY.

OFFICES, 19, PALM-MALL EAST, LONDON.

In 25,000 shares and 5000 debentures, of £2 each.

For the SUPPLY of COALS from their own MINES to shareholders in London at 14s.

per ton; in Liverpool at 7s.; and in Dublin at 10s. For every share the holder will be

entitled to one ton of coals per annum, at the above prices, and to his proportion of the

general profits of the company, which, it is presumed, cannot be less than 20 per cent.

Prospectuses and all particulars may be had at the offices; or from Mr. C. H. Parnell,

3, Basement, Brunswick-buildings, Brunswick-street, Liverpool; Mr. Maguire, General

Mining Company for Ireland, Dublin; and to Mr. J. L. Farley, 92, Lower Gardiner-street,

Dublin. JOHN JAMES HOOPER, Secretary.

GROWA SLATE COMPANY,

TREVALGA, CORNWALL.

6000 parts, or shares, of £5 per part, or share (all paid), whereof 2300 parts, or shares,

are offered to the public.

NOW IN WORK ON THE "COST-BOOK" PRINCIPLE.

THE QUARRY is situated on the CLIFFS, within one mile of the port of Boscasset—

vessels load at the quarry during three-fourths of the year.

THE SLATE forms a remarkable exception to the general constitution of this mineral;

and whilst its applicability to the several purposes of roofing, flooring, and the usual ad-

aptations of the grey, blue, and other slates, a new series of utilities has been developed to

the directors (by a gentleman who has, in consequence, been appointed superintending

engineer to the company), which will extend its application in a variety of preparation to

an extensive and completely novel character of uses.

A PATENT is in course of completion, for the purpose of securing to the shareholders

in this undertaking the exclusive benefits to be derived from one of the most attractive

discoveries of the present age.

Prospectuses, and all other information, may be obtained at the offices of the company,

57, Threadneedle-street, where specimens of the slate may be seen; or to the solicitor,

John Chapple, Esq., 70 A, Aldermanbury. Prospectuses can also be had at the office of

the Mining Journal, 26, Fleet-street.

London, May 16, 1849.

DUISBURG IRON-WORKS AND MINES,

IN WESTPHALIA, CLOSE TO THE RHINE.

Managed in England according to the principles of the "Cost-book System," and in

Prussia as a Société en Commandite, under laws limiting the liability of the shareholders

to their personal subscription.

Company's Offices, 28, Moorgate-street, City.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.

—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British

and Foreign Patents) the great demand for HUTCHINSONISED MATERIALS—hard as

granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all

buildings, hydraulic, paving, monumental and decorative work.—The profits are large.

Apply to HUTCHINSON & CO.,

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REPORT OF THE RAILWAY COMMISSIONERS.

The Report of the Commissioners of Railways to the Queen's Most Excellent Majesty, dated the 1st inst., states, that in the year 1848 an increase was made in the railway communications of the country, greatly exceeding that of any former year: at the commencement of the year, 3,816 miles of railway were open for traffic, and during the year the opening of 1191 miles of railway was sanctioned by the commissioners, of which 751 miles were in England, 289 in Scotland, and 151 in Ireland, making the whole extent of railway communication at the end of the year 5007 miles, the proportion being for England, 3918; for Scotland, 728; and for Ireland, 361 miles respectively. By the opening of the Chester and Holyhead Railway, the communication between London and Dublin has been greatly facilitated. The mails are now conveyed within 17 hours, and the completion of that gigantic work—the tubular bridge across the straits—will effect a saving of one hour more. The most important addition to the railways in Ireland has been the extension of the South-Western communication from Dublin—viz., from Ballyboughby to Tipperary and Limerick, by the opening of portions of the Limerick and Waterford and the Great Southern and Western Railways. The report urges the consideration of the fact how much remains to be completed of the whole extent of railways already authorized by Parliament; it being shown that at the end of 1848 upwards of 7000 miles of railway remained to be completed, no portion of the lines sanctioned prior to 1844, and only 20 miles of the railways sanctioned in that year, being included in that amount. "There can be little doubt (continue the hon. commissioners) that a very large proportion of the authorized railways will not be completed, although no estimate can at present be formed of the extent likely to be abandoned." As it is, 450 miles of lines sanctioned in 1845 and 1846 are already abandoned, and it is probable that 1260 miles, in addition to the above, will share the same fate. In short, it is assumed, on good ground, that at least one-half of the 4800 miles of authorized railways of which the works are not in progress will never be completed under the existing Acts of Parliament. As regards the sums expended on railways, the commissioners believe that the expenditure in 1848 was less than in 1847, but nearly as large as in 1846; that at the end of last year rather more than 200,000,000 had been expended; that the companies retained power to expend on authorized railways about 140,000,000; and that the extension of time which has been granted to so many companies will allow this expenditure to be distributed over five or six years. Under the circumstances, however, it is assumed that at least 50,000,000 of authorized capital will not be required, on account of the abandonment of the works. The report adverts to the great change which has taken place in public opinion with respect to the value of railway investments. During 1848 the price of Consols increased about 4 per cent., while the average price of investments in four of the principal railways declined about 20 per cent. The average price of the shares of these four lines (the North-Western, the South-Western, the Midland, and the Great-Western) was in July, 1847, 148½; in January, 1848, 118½; in July, 1848, 101½; in December, 1848, 95; and on the 20th of April, 1849, 95; exhibiting a fall of 53½ per cent. in less than two years. The commissioners next consider the different interests of the parties involved in railway speculations, showing that the few are capitalists and men of business, whose object it is to reap a golden harvest by gambling in the shares, whereas the many are individuals who purchase railway shares as a profitable investment, and who are, therefore, deeply interested in the proper administration of the affairs of the company. Confidence in the managers or directors of railways is now so generally and so justly shaken, that the commissioners consider the appointment of competent and impartial auditors, and the adoption of a uniform system of accounts and vouchers (carefully adapted to each other), indispensable to the restoration of that confidence. In short, the commissioners are convinced more strongly than ever of the necessity of "establishing some effective mode of checking the financial accounts of companies by some independent authority, in which both the shareholders and the public may have confidence."

It is satisfactory to find from the report that there has been no increase in the number of railway accidents in any way corresponding with the number of new lines recently opened. At the same time, the number of "special" accidents, into the circumstances of which the commissioners have thought proper to inquire, was rather larger in 1848 than in the preceding year. Adverting to the quarrel of the directors of the North-Western company with their engineers, the commissioners express a belief that, the difficulty having passed away, there is no reason to justify, at present, any legislative interference with the free action of this class of railway servants and their employers.

STOKE BURNING.—A correspondent says—"A really perfect apparatus of this description has now been invented, and has been several weeks at work at Gibraltar Colliery, Knotsford, Leeds, where it may be inspected at any time. Not only is it a perfect smoke-burner, but it is on a self-feeding principle, and cannot be affected by the inattention of the engine-men. Moreover, by excluding currents of air, it gives a greater and regular quantity of steam; and, by the use of a small quantity of fuel, it produces a large quantity of steam. The invention, we understand, has been patented by Messrs. Wray and Porter. We saw it in operation on Monday, at the colliery above-mentioned, and although the furnace was fed with common slack or refuse, there was not more smoke than might be seen issuing from any kitchen chimney in the neighbourhood. The operation, so far as smoke burning is concerned, appeared to be perfect. We cannot, of course, give a scientific opinion of the merits of the invention; but we may observe that the above remarks of a correspondent are from a gentleman who has bestowed much attention on the subject, and whose opinion is entitled to great weight. At all events, the apparatus being regularly at work at Gibraltar Colliery, opportunity is afforded to all interested in the subject to examine it for themselves."—*Leeds Mercury.*

Illustrated by 26 Anatomical Coloured Engravings on Steel, On Physical Disqualifications for Marriage, and Impediments to Marriage. New Edition, enlarged to 196 pages.—Just published, price 2s. 6d., or by post, direct from the establishment, 2s. 6d. in postage stamps.

THE SILENT FRIEND: a medical work, on the infirmities and decay of the generative system, from excessive indulgence, infection, and the inordinate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications. Illustrated by 26 coloured engravings. By R. & L. PERRY & Co., consulting surgeons, 19, Berners-street, Oxford-street, London. Published by the authors; sold by Strange, 21, Paternoster-row; Hankey, 63, and Strand, 150, Oxford-street; Starke, 23, Titchborne-street, Haymarket; and Gordon 146, Leadenhall-street.

PART THE FIRST treats of the anatomy and physiology of the reproductive organs, and is illustrated by six coloured engravings.—PART THE SECOND treats of the consequences resulting from excessive indulgence, and their lamentable effects on the system, producing mental and bodily weakness, nervous excitement, and generative incapacity: it is illustrated by three explanatory engravings.—PART THE THIRD treats of the diseases resulting from infection, either in the primary or secondary form, and contains explicit directions for their treatment. This section is illustrated by 17 coloured engravings.—PART THE FOURTH contains a prescription for the prevention of disease by a simple application, by which the danger of infection is obviated. This important part of the work should not escape the reader's notice.—PART THE FIFTH is devoted to the consideration of marriage and its duties. The causes of unproductive unions are also considered, and the whole subject critically and philosophically inquired into.

THE CORDIAL BALM OF SYRIACUM is exclusively employed in treating nervous and sexual debility, impotence, &c., 11s. and 3s. per bottle.—THE CONCENTRATED DETENSIVE ESSENCE, an anti-aphrodisiac remedy, for purifying the blood in cases of infection, secondary symptoms, eruptions, and the abuse of mercury, 11s. and 3s. per bottle.—PERRY'S PURIFYING SPECIFIC PILLS, 2s. 6d., 4s. 6d., and 11s. per box: a certain remedy for gonorrhoea, gleet, stricture, and chronic inflammation of the bladder.—Consultation fee, if by letter, 2s. A full description of the case is necessary, stating age, sex, and position, with advice, with free, to be had at the establishment only, by which the fee, 2s. is saved.—Messrs. Perry, surgeons, are in attendance daily at 19, Berners-street, from 11 to 3, and 5 to 8; on Sundays, from 11 to 1.

Sold by Saffron and Co., 10, Bow Churchyard; W. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon-street; Butler, 4, Chesapeake; R. Johnston, 63, Cornhill; L. Hill, New Cross; W. B. Jones, chemist, Kingston; J. W. Tanner, Egham; S. Smith, Windsor; J. B. Shillock, Bromley; T. Riehes, London-street, Greenwich; T. Parkes, Woolwich; Ede and Co., Dorking; and John Thurstly, High street, Romford, of whom may be had the Silent Friend.

DR. LAURENT ON THE SECRET INFIRMITIES OF YOUTH AND MATURITY. With 40 coloured engravings on steel.

Just published, and may be had in French or English, in a sealed envelope, 2s. 6d.; or post-free, from the author, for forty-two stamps.

SELF-PRESERVATION: A Medical Treatise, on the Physiology of Marriage, and on the Secret Infirmities and Disorders of Youth and Maturity, usually acquired at an early period of life, which enervate the physical and mental powers, diminish and enfeeble the natural feelings, and exhaust the vital energies of Manhood; with Practical Observations on the Treatment of Nervous Debility, whether arising from these causes, close study, or the influence of tropical climates; local and constitutional weakness, syphilis, stricture, and all diseases and derangements resulting from indiscretion; with 40 coloured engravings, illustrating the Anatomy, Physiology, and Diseases of the Reproductive Organs, explaining their various structures, uses, and functions, and the injuries that are produced in them by solitary habits, excesses, and infection.

By SAMUEL LAURENT, M.D., 37, BEDFORD-SQUARE, LONDON. Doctor of Medicine, Matriculated Member of the University of Edinburgh, Licentiate of Apothecaries' Hall, London, Honorary Member of the London Medical Society, &c.

"The author of this singular and talented work is a legally qualified medical man, who has evidently had considerable experience in the treatment of the various disorders arising from the follies and frailties of early indiscretion. The engravings are an invaluable addition, by demonstrating the consequences of excesses, which must act as a salutary warning to youth and maturity, and by the personal many questions may be satisfactorily replied to, that admit of no appeal, even to the most confidential friend."—*Era.*

"Unquestionably this is a most extraordinary and skillful work, and ought to be extensively circulated; for it is quite evident that there are peculiar habits acquired at public schools and private seminaries, which are totally unknown and concealed from the conductors of those establishments, and which cannot be too strongly reprobated and condemned. The engravings that accompany the work are clear and explanatory; and being written by a duly-qualified medical practitioner, will, doubtless, be the means of saving many a youth, as well as those of maturer age, from the various evil consequences resulting from early indiscretions."—*Magnet.*

Sold by Kent and Richards, 59, Paternoster-row; Hankey, 63, Oxford-street; Starke, Titchborne-street, Haymarket; Mansell, 116, Fleet-street; Gordon, 146, Leadenhall-street; or free by post, for 42 stamps, from the author's residence, who may be consulted personally (or by letter) on these disorders daily, from 10 till 9, and from 5 till 8.

TRANSACTIONS OF SCIENTIFIC BODIES.

MEETINGS DURING THE ENSUING WEEK.	
MONDAY.....	Statistical—12, St. James's-square..... 8 P.M.
	British Architects—46, Grosvenor-street..... 8 P.M.
	Chemical—Society of Arts, Adelphi..... 8 P.M.
	Medical—Bolt-court, Fleet-street..... 8 P.M.
	Pathological—21, Regent-street, Waterloo-place..... 8 P.M.
TUESDAY.....	Medical and Chirurgical—53, Berners-street..... 8 P.M.
	Civil Engineers—25, Great George-street..... 8 P.M.
	Zoological—11, Hanover-square..... 8 P.M.
WEDNESDAY.....	Society of Arts—Adelphi..... 8 P.M.
	Naturalists—11, Regent-street..... 7 P.M.
	Ethnological—17, Saville-row..... 8 P.M.
THURSDAY.....	Antiquaries—Somerset-house..... 2 P.M.
	Royal Society—Somerset-house..... 8 P.M.
	Royal Society of Literature—St. Martin's-place..... 3 P.M.
	Naturalists—11, Regent-street, Covent-garden..... 7 P.M.
FRIDAY.....	Royal Institution—Albemarle-street..... 8 P.M.
	Philosophical—London Library, 12, St. James's-square..... 8 P.M.
SATURDAY.....	Royal Botanic—Inner Circle, Regent's Park..... 3 P.M.

ROYAL INSTITUTION.

Mr. FARADAY resumed his course of lectures on Franklinian electricity, on Saturday. He said he should, in the present lecture, confine himself to the consideration of the nature of electrical force, which in the preceding one he had shown the various means of exciting. (See *Mining Journal*, April 28.) The opinions of early electricians respecting the nature of the force excited by the friction of electrics were stated, for the purpose of showing the impressions which such strange phenomena were calculated to produce when first known, and also as a caution against mingling theory with fact in the statement of any observed effects. One of the most remarkable characteristics of electrical force is its power of attraction and repulsion; which two opposite forces are always found together, like cause and effect, and may be inverted; so that the electric which at one moment attracts will in the next moment repel. Several experiments illustrative of the repulsive power of electricity were exhibited, the most curious of which was the repulsion of a small balloon inflated with common air; the repelling power imparting to it an apparently ascending force, which raised it in the air. The two forces of attraction and repulsion seem, Mr. Faraday observed, to arise from the presence of two kinds of electricity, and in the early stages of the science the apparent existence of two kinds of electricity became known, one of which, being excited by glass, was called vitreous, and the other, being excited by resin, was called resinous electricity. Mr. Faraday cautiously guarded himself from affirming positively that there are two kinds of electricity, but he said that there appeared to be two different electrical conditions, and he should, therefore, adopt the usual phraseology in speaking of electricity as consisting of two kinds. To show the distinction between vitreous and resinous electricity, a small gilded balloon was suspended, to which electricity was imparted, first by an excited glass rod, and afterwards by a rod of shellac. The effects of attraction and repulsion were the same in each case separately, but when the balloon was repelled by the glass it was attracted by the shellac; when the latter repelled the glass attracted; and when the glass rod and the shellac together were brought near the balloon, the opposite electricities neutralised each other, and no effect whatever was produced. These experiments proved that what one kind of electricity can do, the other kind can do, but that when they are both united their forces are destroyed. Though appearances thus show that there are two kinds of electrical force, there is no evidence of the existence of a third kind, for notwithstanding the varieties of substances by which electricity can be excited, the electricity is in every case either vitreous or resinous, and no other. It is one of the laws of electrical action, that bodies similarly electrified repel each other; and it is on the application of this property that the action of electrometers depend, the gold leaves or the pith balls diverging in consequence of each one being charged with electricity of the same kind. An easily constructed and rather sensitive electro-scope was put together by Mr. Faraday. It consisted of a watch glass laid on the table, with its convex surface uppermost; on this was placed a small piece of flat glass, and upon the flat surface was balanced a thin film, which was very easily attracted or repelled by an excited electric. The facility with which electricity may be transferred from one body to another was shown by means of a small metal ball suspended by a silk cord, which, when applied to an electrified metal globe, became instantly charged with the same kind of electricity. The induction of different kinds of electricity in a metal globe divided into two was also exhibited. Each half was mounted on a glass insulating stand, and after being placed together an excited glass rod was held near to one of the hemispheres. Whilst the electric continued to be held near, the other hemisphere was removed; and when the electrical condition of the two was examined one was found to be charged with positive or vitreous electricity, and the other with negative or resinous electricity. Mr. Faraday concluded by directing attention to the distinction between the transfer of electricity and the conduction of heat; for in the case of electricity the whole of it may be removed, so as to leave the body in an absolute state of zero, whilst the conduction of heat only lowers the temperature, and it is impossible by any known means to abstract the heat entirely.

INSTITUTION OF CIVIL ENGINEERS.

MAY 15.—JOSHUA FIELD, Esq. (President), in the chair.

The discussion on Mr. Hawkshaw's paper, "On a longitudinal continuous bearing Permanent Way," was continued throughout the evening, the exclusion of every other subject. Some interesting observations were made on the actual destruction of the cast-iron chairs and double-headed rails, and the advantages that would result from the more general substitution of continuous longitudinal timber bearings for the present transverse sleepers and cast-iron chairs. The gradual ameliorations that had taken place in the forms and strength of the bridge rails and their various fastenings were discussed; and it was contended that the hollow bridge rail was more durable than any other, that the upper surface was more compressed in rolling, and that the system of connecting the end, whether by rivetting to a plate, or by bolts and nuts, made a better and more even joint, and, therefore, produced a more level surface for the engines and carriages to run upon. The duration of the timber was declared to be such, that a second set of bridge rails had been laid down on the longitudinal timbers, whereas the cross sleepers had never been able to bear that. This, however, it was asserted, arose principally from common timber being used for the transverse sleepers, whilst the best kind, well crooked, was used for the longitudinal bearers. The system of inserting a piece of hard wood between the rail and the main timber, as on the Great Western Railway, was much approved, as was also the plan of side transoms halved into the main timbers, as it enabled a better system of drainage to be employed than had been usual with that kind of permanent way.

The new systems tried by Mr. Samuels on the Eastern Counties Railway, and of which several models were exhibited and described, received much commendation, particularly the plan for dispensing with the joint chairs and uniting the ends of the rails by two side pieces, or fishes, of cast-iron, bolted through and to each other, so as to render that part quite equal in strength to the body of the rail. The question of the means of allowing for the contraction and expansion of a line of securely fastened rails was discussed, as was the creeping or advancing motion of rails in the direction of the traffic.

The general opinion seemed to be decidedly in favour of the longitudinal bearing, although it was admitted that many of the transverse sleeper railways—for instance, such as had been laid on the plans of Cubitt and of Hawkshaw—were so good that it was not to be presumed they would be removed to make way for the longitudinal system.

IMPORTANCE OF THOROUGH VENTILATION IN COLLIERIES.

At the Society of Arts, on Wednesday evening last, Mr. FRANCIS WHITEHAW read a paper on the above important subject, by Mr. EDGINTON, the latter gentleman explaining, by diagrams on the walls, the various details. After alluding to the vast importance of the subject, and the interest which was at the present moment drawn towards it, the writer explained the nature of fire-damp, or carburetted hydrogen gas, which was continually more or less being given out in coal mines; and the several details of various analyses which had been taken, all productive of different results, each producing more or less of the light olefant gas, hydro carbon, &c. These analyses were taken, after treating the gases with caustic potash, &c., to free them from carbonic acid, which the writer regretted, as it would have been desirable to ascertain what quantity of carbonic acid fire-damp in its native state contained. The blue flickering flame seen towards the roofs of fiery mines arose from the presence of the hydro-carbon of carbon. He was aware that some of the first chemists of the age approved of the use of wire gauze as a preventive from the flame coming in contact with the outer atmosphere; but he considered the safety of such a lamp very questionable, particularly when affected by blowers, and when the interstices or meshes of the wire gauze became clogged with the fine particles of carbonaceous matter floating about in all mines, it caught fire and formed a conductor to the outer explosive atmosphere, and from these circumstances, he did not think it entitled to the proud title of safety lamp. What he meant by perfect ventilation was not a system aided by air-pumps, fan blowers, high-pressure steam, or other artificial means; he wished to see a system by which a safety-lamp was not required, and the men might work securely by candles, and he believed it possible to adopt such a system of natural ventilation round the face of the workings where the men were at work. Under the present system, when an accumulation of fire-damp took place along an unbroken wall at the back of the goaf, and exploded, the men are thrown towards the open work, and their destruction is certain. The changes continually taking place in the atmosphere of a mine are not noticed, as the men, being intent on their work, cannot be always on the watch.

Mr. Edginton then proceeded to describe his plan of ventilation, for which purpose he referred to several diagrams, and a plan of Haswell Colliery. It

will, of course, be impossible to follow the explanation in the absence of these; but the general plan recommended appeared to be with two shafts, a down-cast and an up-cast; space should be left to ventilate the back roads, and thus all gases set free will be immediately carried from the men. The air is to be so split that one half should ventilate the goaf and the other half the coal face. There should be as many streams as there were shafts; and in these, when practical, the air should be returned. Mr. Edginton then further described his new plans of cutting headings from the roads to carry away the gas and air to the up-cast shaft, and connecting all the high levels together to drain the roofs. His system could be carried out in all existing workings, and the expense would be comparatively little or nothing, in proportion to the good effected, as naked candles might be used, and the collar pursue his work in perfect safety. He said the greatest evil at present in existence in the northern collieries was the want of any regulated arrangement in the ground works. In the Haswell Colliery (where, in the last explosion, 75 lives were lost), for want of this arrangement, there were no less than 22 currents, or divisions, of air passing in all directions, and counteracting each other. Under the new system, on removing the walls, the currents of air should be reversed, and the safety of the mine would be continued. He also explained how, in cases of fallen roof, by cutting the end of the roadway up to a level with the roof, or cutting a way diagonally down to the roadway, the current of the air and the gas would be continued uninterrupted. Mr. Edginton, at the conclusion, was applauded; and the CHAIRMAN, in the name of the society, returned thanks for his interesting paper.

Mr. VARNY called attention to the plan of Mr. Ryan, laid before the society 30 years ago, and for which a pecuniary reward was given him. He believed this plan was generally admitted to be the most perfect, and yet its author had never been enabled to carry it out in practice. He considered that, when a plan was found to be perfectly efficient in the thorough ventilation of collieries, owners should be compelled to adopt it under heavy penalties.

A GENTLEMAN, whose name we could not catch (one of the vice-presidents), thought a compulsory act could never be effective; he particularly alluded to the deep mines of Durham, from 1000 ft. to 1800 ft. in depth, where the necessity of sinking two or four shafts must be left to the discretion and experience of owners and their engineers, who, for the salvation of their own property, would do all in their power to prevent these alarming accidents.

Mr. GORE inquired of Mr. Edginton whether his system was not more applicable to the long wall than the pillar and stall method of working coal mines?—Mr. EDGINTON technically explained, in which we understood him that it might be made available to both, as in the latter system artificial stoppings might be employed.—Some discussion then ensued on the merits of the safety-lamp on the principle of the Davy wire gauze protector, from which we could glean the general opinion to be, that it ought not to be trusted to as a means of safety; but only as a test as to the state of a mine at any particular moment. We think, however, not the slightest less degree of merit is due to the memory of Sir Humphrey, as being the first to take advantage of the beautiful property of a finely-perforated disc of metal, or wire gauze, in the construction of the collier's lamp. Although nothing particularly new was elicited, as Mr. Edginton's plan is as yet only in theory, still the discussion was interesting.

[From the Plymouth Journal.]

CARADON COPPER MINE.—This mine is in the parish of St. Clear, about half a mile to the south of the granite range of the Caradon Hills. Three lodges have been discovered, and an engine-shaft sunk 30 fms., and levels extended east and west. The expenditure has exceeded 3000l. The prospects of the mine cannot be said to be very encouraging, but the locality and geological position are good.

CARADON UNITED is also in St. Clear, and situated about half a mile to the south of the justly celebrated West Caradon, on the borders of the granite. The engine-shaft has been sunk 40 fms., and several layers of rock, granite, spar, gneiss, passed through, which has caused the sinking to be very expensive. No regular and well-defined lode has been met with, but there is some irregular lode ground, in which spots of tin and copper have been found, which have "clocked" on the adventures, whilst the riches discovered in West and South Caradon Mines could not fail to be a strong incentive to perseverance. It is somewhat extraordinary that West and South Caradon are the only copper mines in this district which have as yet made any considerable returns to the adventurers.

SOUTH CARADON embraces all the lodges which have been discovered in West Caradon, Wheel Agar, and Caradon Wheel Hooper. The principal operations have hitherto been confined to what is termed the main lode, and to Clynno lode; both these lodges have been very productive, but for some time past the end of the main lode has been poor, and the agents are now compelled to do that which ought long since to have been done—increase their network, and drive a cross-cut north to intersect their north lode, which in the neighbouring mine, West Caradon, has been attended with unusual success. The present returns are mostly from Clynno's lode, on which there is a very considerable quantity of ore ground laid open. A new shaft is being sunk from the surface about 300 fms. to the east of the present workings, in a large lode. The monthly profits are about 2000l.

WEST CARADON MINE, in the parish of St. Clear, opposite South Caradon on the west, is a small mine, on the south by Clynno lode, on the north by East Wheel Agar, and on the west by Craddock Moor; eight productive lodges have been discovered, which are now returning about 300 tons of ore per month, at a monthly profit to the adventurers of about 500l. There are on this mine four steam-engines—one a 30-hp pumping engine, two 20-hp steam engines, and one 30-hp for crushing and stamping ore. The engine-shaft has been sunk 128 fms. on the main lode, and cross-cuts extended north and south from the shaft to intersect the side lodges, several of which are now standing high and dry from the present deep level to surface. To the recent improved management may be attributed the prominent position of this mine at the present moment, and which stands in strong relief against the plan, at no distant date practical here of stopping every end, when it became poor, which, even in the best mines, each end must do in turn. If this plan had been persevered in, and had the cross-cuts not been driven, the position of West Caradon would have been far other than it is at present. Very large quantities of ore are laid open, and the ore in sight is sufficient to ensure returns for many years to come, equal, at least, to those now being made.

WHEEL AGAR.—The tin sampled last week was about 10 tons. There is nearly as much more tin on the stamps and broken ready for the stamps. It is a very good sheet of tin coming into the 70 fms. level; the slopes in the 30 fms. level east are very good, and the 90 fms., which has been driven about 12 fms. east and west, is improving gradually in each end. This cannot fail, when the levels are extended, to make a good mine.

WHEEL FRANKO.—There is no change since our last. In our paper of last week we stated that at the general meeting on the 30th there would be funds sufficient to pay a dividend of 2l. per share, and leave upwards of 400l. in the purser's hands. It should have been—"one pound per share." With this amendment the announcement is correct.

BIRCH TOR AND VELFER MINES.—Birch Tor Lode: The dividing and casing of Pridelux shaft has been completed. No lode has been taken down either in the 10 fms. level east or west. The shallow adit has improved since the last report, and we have a good shoot of tin in the level under that referred to in the rise over this level sooner than we had expected.—Velfer Lode: We have begun the Bob pit at the old engine-shaft. We have taken down a piece of lode in the 10 fms. level east, and in the 10 fms. level west of Dunstan's shaft, and the lode continues very good in both ends.

PLYMOUTH WHEEL YEOLAND.—The North Lode has been traced for a great distance, and above the adit which has been driven on it by the ancients; all the ground as it approaches the boundary of this sett from the east has been carried away, clearly proving that it produced good work for tin; it has been seen at two points in this sett, the one above 180, and the other about 230 fms. from the ancient workings above referred to, and at each of these places, were the adit brought up, the lode would come away at 6s. 8d. tribute; the adit is not far behind the last named of these places.—The South Lode: The adit is still being driven to cut this lode, but the progress is slow. In the Bob shaft the lode continues gradually to improve. There is every reason to believe that this mine will amply compensate the adventurers for their many disappointments and great perseverance. The main engine-shaft is in the best possible position to take the south lode, which it will intersect at about the 70 fms. level, and we hope that the sinking of this shaft will be speedily resumed. There are liabilities on this mine, but as they do not amount to one-half of the value of the materials, they cannot be considered to be very heavy. An arrangement has been made to lease a part of the power of this engine to the adventurers in Plymouth Wheel Yeoland East.

PLYMOUTH WHEEL YEOLAND EAST.—In consequence of the arrangements made with the adventurers in Plymouth Wheel Yeoland for leasing a part of the power of the engine, pumps and flat rods have been purchased, and preparations are making to see this lode under the working of the ancients. We wish them as good luck as their friends at Birch Tor.

ACCIDENTS.

Merthyr.—Henry White was killed in the Cwmaberg level, by a fall of earth.—H. Moses was killed by a fall of rubbish from the top, in one of the Plymouth levels.—T. Joseph was killed by a fall of earth in one of the Dowlais levels.—D. Richards was killed by the trams in one of the Penydarren coal levels.

Leeds.—James Hartley was so much injured whilst working at the Gelderd-road Colliery, on Monday, that he has since died. He was employed filling a corve, when a large quantity of top coal fell, and severely crushed his thighs and other parts of his body.

Maesteg.—Geoffrey Williams and John Williams sustained severe injuries from falls of stone from the top, in the levels belonging to the Llynvi Iron Company.

Midfield.—On Tuesday morning a young woman, named Mary Davis, was killed by a quantity of hot ironstone falling upon her, whilst at work at a mine at Midfield Furnaces, belonging to Mr. Riley. She was burnt in a most shocking manner, and her body was removed to her home in Gibbet-lane, to await an inquest.—*Wolverhampton Chronicle.*

Wolverhampton.—On Friday week a collier, named Thomas Small, sustained a compound fracture of his right leg, and was dreadfully cut about the head, by a fall of mine at the Belliam Colliery.

Staffordshire.—A poor lad, named James Condliff, was buried alive at the Woodhills Colliery, by the sudden giving way of the earth. He had been with his father's breakfast, who is a boatman, and went to the colliery, where he was joined by two other lads, for the purpose of picking coal. The veins had been purchased, and preparations are making to see this lode under the working of the ancients. We wish them as good luck as their friends at Birch Tor.

CONSTITUTIONS, HOWEVER WEAK OR DEBILITATED, MAY BE COMPLETELY RENOVATED BY HOLLOWAY'S PILLS.—The extraordinary sale of these admirable pills throughout every part of the civilized world is the most convincing proof of their efficacy in the cure of various disorders. In cases of weak or debilitated constitutions, their properties are such as to purify the blood, invigorate the system, and establish the soundest health. Persons suffering from lowness of spirits, nervousness, imperfect digestion, or changed stomachs, bilious affections, liver complaints, determination of blood to the head, or even epileptic fits, will find in this truly valuable medicine a certain, safe, and efficacious remedy. Sold by all druggists, and at Prof. Holloway's establishment, 244, Strand.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY ... South Tyne Colliery Company—offices, at One.
City of London Gas-Light Company—offices, at One.
TUESDAY ... Mutual Life Assurance Company—London Tavern, at Twelve.
Horne Bay Pier Company—King's Head, Putney, at Two.
WEDNESDAY ... Runnall's Colliery Company—Black Eagle, Woolwich, half-past Five.
National Bank of Ireland—offices, at Twelve.
THURSDAY ... Ionian Bank Company—offices, at One.
Law Life Assurance Company—offices, at One.
FRIDAY ... Tontine Life Assurance Company—offices, at One.
Crown Life Assurance Company—offices, at Twelve for One.
SATURDAY ... Great Britain Mutual Life Assurance Company—offices, at One for Two.
[The meetings of Mining Companies are inserted among the Mining Intelligence.]

THE PROVINCIAL BANK OF IRELAND.

An extraordinary general meeting of the proprietors of this bank was held at their office, 42, Old Broad-street, on Thursday, the 17th inst., for the purpose of taking into consideration, and confirming, if approved of, several resolutions unanimously adopted at an extraordinary general meeting of proprietors, held on the 16th of April last, for effecting certain alterations in their Deed of Settlement. The usual yearly general meeting was held at the same time, for the purpose of electing four directors, in place of those going out by rotation, and receiving the report of the directors on the business of the past year.

Sir JOHN YOUNG, Bart., M.P., having taken the chair, proceeded to say that they were then assembled for the double object—first, of holding an extraordinary general meeting for the purpose of confirming certain amendments in their charter, which had been submitted to a previous meeting; and, secondly, after that business should have been transacted, in order to hold their yearly general meeting for the purpose of electing four directors, in place of those going out by rotation, and hearing from the report of the directors an account of their proceedings during the past year. His first duty was to call on their secretary to read the advertisement convening the extraordinary general meeting.

The SECRETARY (Mr. HOWAT) having read the advertisement accordingly, the CHAIRMAN said, that he had then to submit to them certain resolutions which had been unanimously agreed to at a former meeting, on the recommendation of the directors. He would proceed to read those resolutions, and put them *seriatim* for confirmation.

The first three resolutions, which were to the effect that all the directors and persons specifically appointed by them should be trustees of the bank, and that the securities and property of the bank should be placed in the names of not less than two of such trustees, were unanimously adopted without any discussion.

The fourth resolution, which was to the effect that any proprietor holding the necessary qualification might be elected a director, though he might not have been a proprietor for six months previous to the day of election, having been put.

Capt. PORTER, R.N., said he should be glad to be made acquainted with the reasons which had induced the directors to propose that alteration in their Deed of Settlement.

The CHAIRMAN, in reply, said that the only motive that had induced the directors to propose that alteration in the Deed of Settlement was, their desire to remove an unnecessary restriction on the discretion of the proprietors in the choice of directors. It might happen that it would be extremely desirable to elect as a director a gentleman who had held the requisite number of shares for a less period than six months; and the object of the resolution was to give that power to the proprietors. He had only to add, that the matter had been fully explained at their previous meeting.

The resolution was then unanimously adopted. The three remaining resolutions, which provided that the shares of proprietors should be subject to the payment of their debts and liabilities to the bank, were also unanimously agreed to.

The CHAIRMAN said, that those were the only resolutions which had been submitted to the former meeting, and which they required confirmation. He proposed that they should next proceed to the business of the yearly general meeting; and he had, in the first place, to call on the secretary to read the advertisement convening it.

The SECRETARY having read the advertisement accordingly, the CHAIRMAN said, that their first business would be to elect four directors, instead of those going out by rotation. Those gentlemen who were eligible, and who offered themselves for re-election, were Henry Alexander, Esq.; Matthias Attwood, Esq.; James Helme, Esq.; and Sir Moses Montefiore, Bart. The gentlemen in question were re-elected directors unanimously, and without any discussion.

The CHAIRMAN said, that the secretary would then proceed to read the report of the directors on the business of the past year.

The SECRETARY accordingly read the following report by the directors of the Provincial Bank of Ireland to the proprietors assembled at the 24th yearly general meeting, held on Thursday, the 17th of May, 1849:—

"The directors regret that they cannot on this occasion congratulate the proprietors on any improvement in the state of the country. On the contrary, the circumstances which have continued to operate. The harvest of 1848 disappointed the expectations which, in the early part of the summer had been formed respecting it, the season having turned out wet and most ungenial. The grain crops on the whole were greatly deficient. Wheat and barley were particularly so, and at the same time the quality was very inferior, and the oats, though in some places both productive and of fine quality, were certainly in the aggregate considerably under an average crop. The potato was much more extensively planted than in the previous year, and for a time bore a most promising appearance. About the middle of July, however, the plant was affected as in the year 1846, and continued to decay, and much of the crop, especially the late planted, was wasted by premature use, or altogether lost, and the quality of what remained was greatly deteriorated. Instead, therefore, of assuming her position as an exporter of grain and flour, Ireland has continued during the past year to require for her own use supplies of the coarser descriptions of foreign corn. Under these circumstances, the produce of the country has been diminished, and business has, of course, suffered much depression, so that it must be apparent to the proprietors that Ireland has not, during the past year, presented a favourable field for banking operations. It has to be stated for the information of the proprietors, that having found the branch at Downpatrick, in the county of Down, unprofitable to the bank, the directors resolved to discontinue it, and they accordingly took measures for gradually winding up the business, and closed the branch in September last. It may further be stated, that the condition of the money market has not admitted of profitable employment being always found for the funds which the bank must necessarily keep available for contingent purposes. When, therefore, all the circumstances of the past year are reviewed, the directors consider that there is reason to be satisfied with the result of the business of the bank during such a period. To that result, as exhibited in the following statement, the directors have now to request the attention of the proprietors:—

The account submitted to the last yearly general meeting, in May, 1848, showed the amount of rest, or undivided profits, at 25th March, 1848, £107,505 10 11. From which there had been deducted the amount of two half-yearly dividends—viz., at Midsummer, 1848, 21,600*l.*; at Christmas, 1848, 21,600*l.*—Together 43,200 0 0

Leaving a balance of £64,305 10 11
To which there has since been added the amount of net profits for the year ending the 31st, being the last Saturday of March, 1849, after deducting the property-tax and all expenses, and providing for all bad and doubtful debts £45,733 5 6

Making the rest, or amount of undivided profits, at 31st March, 1849, £110,038 16 5
"The directors have only further to state that it is their intention to pay as usual, in July next, a dividend of 4 per cent. for the half-year ending at Midsummer, being at the rate of 8 per cent. per annum, or 1*l.* on each 100*l.* share, and 8*s.* on each 10*l.* share; and they purpose also, as heretofore, to pay the property-tax for the proprietors."

"ALFRED TROSBY, Chairman." The CHAIRMAN said, he believed that every gentleman present could confirm, from his own knowledge, the statement contained in the report, with respect to the depressed condition in which Ireland had been placed during the last year, as well as the difficulties that had attended the commerce of the country in general. The proprietors, however, would see that, even under these untoward circumstances, the directors, after having made the fullest allowance for doubtful and bad debts, had at their disposal a sum sufficient to enable them to pay their usual dividend. (Hear, hear.) If none of the proprietors had any objections to make, or any questions to put, perhaps some gentleman would move that the report be then adopted.

Mr. S. WARNER said he had great pleasure in moving the adoption of the report. He thought, considering the unfortunate condition in which Ireland was at present, and had for some time been placed, the proprietors had reason to congratulate themselves on the very excellent position of that bank, and to feel completely satisfied with the conduct of their directors. (Hear, hear.) Captain PORTER seconded the motion.

The motion that the report be adopted was then unanimously carried. The CHAIRMAN regretted that the state of Ireland was so very depressed at the present moment from various causes. He might date its distress from the year 1845, when the potato crop failed, which article of itself formed one-half of the produce of the soil, so that its failure must have been a severe blow to the prosperity of every class in Ireland. In the following years the improvement in the crops was but small; and as to the year 1848, one-half of the potato crop might be said to have failed, which he would set down as one-fifth of the whole produce of the soil which had thus been lost to that country. If to this calamity they added the commercial depression in England, the effects of capital being diverted from its ordinary channels, through the railway mania, and the troubles of the continent in 1848, they must see ample reasons for paralyzing all banking operations in England, which must, of course, be felt by a reaction in Ireland. Being a member for an Irish county, he could say from experience that, as long as England was not prosperous, there was no chance of prosperity in Ireland. (Hear, hear.) When it was considered that Ireland, instead of being an exporting country to our large towns of Birmingham, Sheffield, and other places, had, through the failure of her crops, become an importing country, the distress of her farmers must be apparent to every one, as well as that of those dependent on the soil for their subsistence. (Hear, hear.)

The Rev. J. LAWES then moved the cordial thanks of the meeting to the court of directors for their continued attention to the interests of the bank, and to the chairman for his conduct in the chair. (Hear, hear.) He was sure that that motion would be willingly and unanimously adopted by the meeting.

Captain PORTER seconded the motion. He was the only person who had put any question that day to the chairman or the directors; but he could assure them that he continued to place in them the most unqualified confidence. (Hear, hear.) And he believed that every other proprietor participated with him in that feeling. (Hear, hear.)

The resolution was unanimously adopted. The CHAIRMAN said he had, in the first place, to express his exceeding gratification at having received the thanks of so numerous and highly respectable a meeting for his conduct in the chair. With respect to his brother directors, he felt convinced that they had not one among them who did not stand at his side with the greatest earnestness, and whose whole heart was not devoted to the welfare of that establishment. (Hear, hear.) The attention which they gave to the affairs of the bank was not to be measured solely by their attendance at meetings of that kind; for they had devoted to its interests in other places much time and labour. He could assure the meeting that the amount of knowledge and ability he had heard brought to bear by their board of directors on banking affairs in Ireland had convinced him that no establishment could have at its head men more capable of doing justice to the trust confided to them. (Hear, hear.)

Sir B. MACNAMARA, R.N., then proposed the thanks of the meeting to the local directors in Ireland, and to the other officers of the establishment, for their satisfactory performance of their respective duties. He was sure that the meeting would adopt that motion by acclamation, as they must be well aware that the report of their directors would have been a very different one from what it was, had it not been for the zeal and ability of those gentlemen. (Hear, hear.)

The CHAIRMAN said he felt much pleasure in submitting that resolution to the meeting. It was manifest that a bank of that description could not be prosperously or safely conducted without the aid of officers in whose temper, knowledge, and judgment, the

directors could place the utmost confidence. He believed that the different posts in their establishment—and some of them were of a very difficult and arduous character—were filled by gentlemen admirably calculated in every way to discharge the duties intrusted to them. (Hear, hear.) The motion was unanimously adopted, and the meeting separated.

NATIONAL PROVINCIAL BANK OF ENGLAND.

The annual meeting of this bank was held on the 10th inst., at the establishment, in Bishopsgate-street.—On the motion of Sir DAVID SCOTT, seconded by Sir JOHN CAMPBELL, J. FACTOR LAUREN, Esq., took the chair.

Mr. D. ROBERTSON (the general manager) read the report, which was of a highly satisfactory nature, showing that the bank, in spite of the difficulties of the past year, had gone on in a course of steady improvement. The directors had thought proper to withdraw the sub-branches at Gower and Ventnor, in the Isle of Wight, and Halesworth, in Suffolk; on the other hand, they had established three new branches, under favourable circumstances—one at North Shields, one at South Shields, and the other at Wrexham. The yearly summary was as follows:—

1848—Jan. 1.—Amount of undivided profits	£26,930 7 2
Dec. 31.—Net profits for 1848, after making allowance for bad debts and doubtful debts, and for a proportion of preliminary exp.	28,806 10 5
Total	£115,736 17 7
Deduct dividend on company's stock for 1848	24,649 16 0
Leaving undivided profits at 31st Dec., 1848	£ 91,087 1 7

The CHAIRMAN moved the adoption of the report, after having made some judicious remarks on the subject of joint-stock companies and other matters.—Mr. WADE seconded the resolution, which was agreed to.

A resolution for a dividend, at the rate of 6 per cent. per annum was passed unanimously. Robert Bell, Almon Hill, and Thomas J. Wilson, Esqs., were re-elected directors.

Mr. GIBB proposed that the thanks of the proprietors be given to Mr. D. Robertson, the general manager, and the other officers of the establishment.—Mr. HITCHEN seconded the motion, which was passed unanimously.

Mr. ROBERTSON returned thanks on behalf of himself and the other officers of the establishment.—A vote of thanks was then passed to the chairman and directors, when the meeting adjourned.

BANK OF AUSTRALASIA.

An extraordinary general meeting of this company was held, on Monday last, for the election of a director in the place of H. De Castro, Esq., deceased, which was well attended.

CHARLES MORRIS, Esq., took the chair, and said that Mr. Whitmore and Mr. Henriques having withdrawn as candidates, there only remained two—viz.: F. Newsum, Esq., and Alexander Wilson, Esq.

Mr. NEWSUM then presented himself to the meeting, and, after mutual explanations between him and Mr. Foster, respecting some observations made by the latter gentleman at a former meeting, observed that he had understood the directors had stated that they could not consistently assist him as a candidate, because of the course he had pursued, on several occasions, at the public meetings here. Now, as he was perfectly unconscious of ever having offered anything like a factious opposition to the board, or pursued a course which would have reflected on the bank, he was quite willing to leave the point to the proprietors themselves, and at once retire, if they were not fully satisfied with his conduct (no, no); for it must be clearly apparent that the chief honour of a seat in this direction must arise from being placed there by the good-will and confidence of the proprietary. (Hear, hear.)

After some remarks from Mr. WOOTTON, who supported Mr. Newsum, upon the grounds of his being an old and large shareholder, and well acquainted with their affairs, Mr. JOWAN WILSON said, their first duty was to choose the best man. Mr. Newsum was known among them, and from his high character and standing, there ought not, he thought, to be any question either on the part of the proprietors or directors. It had already been distinctly marked by a very large body of the proprietary that they wished to have Mr. Newsum in the direction, and he strongly deprecated this unworthy opposition to him on the part of the directors. The same case occurred at the London Joint-Stock Bank, where Mr. Meek's election was most strongly opposed by the directors, but where he was successful, and they now found him one of the most valuable members of the board—so it would be with Mr. Newsum. (Hear, hear.)

A PROPRIETOR asked, what were the claims of Mr. Alexander Wilson, of whom they had never heard before?—General CALVERT said, that Mr. Wilson was a man of talent and honour, and had been, for a number of years, connected with the civil department of the Honourable East India Company.

Colonel MITCHELL could not see why the requisite for a director should be that he must be a commercial man, as if no one else could bring talent and connection to the bank.

A PROPRIETOR said, not knowing that Mr. Newsum, whose conduct here always approved, though occasionally he had differed in opinion from him, was a candidate, he had come to vote for Mr. Wilson; but he should now certainly give his vote and all his interest to Mr. Newsum.

After Mr. BROWNROSE (a director) had spoken to the honour and integrity of Mr. Wilson, who, though not a merchant, he thought, would make a good member of the board, a division was called for, when, after considerable difficulty in ascertaining the numbers, it was declared by the chairman that there was a majority on the show of hands of seven in Mr. Wilson's favour. Upon which a ballot was demanded on behalf of Mr. Newsum, and the chairman adjourned the meeting till Tuesday, the 22d inst., for the purpose of taking the votes by ballot.

CALIFORNIA.

We have prepared a table showing the movements of gold from San Francisco up to the latest dates. We have endeavoured to give the names of individuals and vessels bringing the supplies, so that any error may be traced and corrected:—

ARRIVALS OF CALIFORNIA GOLD.	
Boston <i>Albatross</i> , from Honolulu	\$ 100,000
" <i>26th Sep.</i> , from Valparaiso	55,000
Via Chagres, by Lieutenant Loomis	30,000
" " by Mr. Carter	5,000
" " in small lots	10,000
Overland at St. Joseph, Missouri	10,000
Ship <i>Delicia</i> , at New Bedford	5,000
Ship	20,000
Barque <i>Alice</i> , at Cold Spring	4,000
Receipts at New Orleans	20,000
Total receipts	\$ 369,000

Arrivals at London up to April 14	\$ 300,000
By whale-ship, at Talcahuana, from San Francisco	300,000
Whale-ship <i>Unica</i> , on the way to New Bedford from the Sandwich Islands	50,000
Ship of war, <i>Lexington</i> , at Valparaiso	300,000
Schooner at Mazatlan, March 14	240,000
Arrivals in France, reported by French papers	4,000
Whale-ship at Rio, from San Francisco	40,000
Total shipments	\$ 1,403,000

So far as we have been enabled to gather from the conflicting accounts of the shipments of gold from San Francisco, the above is a correct statement. That there have been shipments other than these, we have no doubt. Our accounts from the Sandwich Islands, up to the 30th December, state that the receipt of gold from San Francisco amounts to \$400,000. Of this, only about \$150,000 had been shipped at other ports, leaving a balance of \$250,000 unaccounted for. Our impression is, that the aggregate exportation of gold from San Francisco, up to the latest date, amounted to full \$2,000,000. It must be borne in mind that these shipments are entirely from the digging of last year, from June to December, a period of six months, equal to about 150 working days, and the product of the labour of 1500 men. From the best estimates which have been formed, the total product amounts to between \$3,000,000 and \$4,000,000, from which deduct the export, there remains in the hands of the people of California between \$1,000,000 and \$2,000,000. This is by no means an over estimate. Such is the result, derived from the best authority, of the proceedings in the gold region in the year 1848. We are now about commencing operations for the year 1849.

With all the prosperity, there will be many cases of individual ruin. Disasters will overtake many who have embarked in this enterprise with the most sanguine anticipations. Late advices from San Francisco (March 3), state that the markets of California were literally glutted with goods of all kinds, and that groceries, provisions, &c., were a complete drug—no sales, no purchases, and prices very much depreciated. That the papers of San Francisco were filled with advertisements of ships, merchandise, provisions, &c., for sale. This looks rather gloomy for those who have made shipments of merchandise, &c., from this part of the country to California, but looks very favourable for those who have left for the purpose of digging gold, as the expenses of living will be much reduced, and adventures will be able to accumulate the gold dust more rapidly for their individual benefit.

On the 1st March, not one of the 325 vessels which have left the Atlantic ports since the 1st December, states that the receipt of gold from San Francisco amounts to \$400,000. Of this, only about \$150,000 had been shipped at other ports, leaving a balance of \$250,000 unaccounted for. Our impression is, that the aggregate exportation of gold from San Francisco, up to the latest date, amounted to full \$2,000,000. It must be borne in mind that these shipments are entirely from the digging of last year, from June to December, a period of six months, equal to about 150 working days, and the product of the labour of 1500 men. From the best estimates which have been formed, the total product amounts to between \$3,000,000 and \$4,000,000, from which deduct the export, there remains in the hands of the people of California between \$1,000,000 and \$2,000,000. This is by no means an over estimate. Such is the result, derived from the best authority, of the proceedings in the gold region in the year 1848. We are now about commencing operations for the year 1849.

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DUNN'S THERMO-ELECTRIC TELEGRAPH APPARATUS, FOR PREVENTING THE EXPLOSION OF STEAM-BOILERS.

In our last Number we gave a report of a lecture delivered by Mr. Dunn at the City of London Literary and Scientific Institution, on the prevention of the explosion of steam-boilers. Since then we have had an opportunity of seeing the apparatus at work, by which he proposes to attain this desirable object. The generality of inventions which have at various times been brought before the public of the like nature have, for the most part, been founded upon the principle of self-acting valves. These are dependent exclusively on the pressure of steam in the boiler, and not upon temperature, which Mr. Dunn asserts to be the only true criterion of safety; and a great objection to the self-acting valves is, that their machinery is as liable to get out of order as the valve itself.

This invention professes to supply a gauge, or indicator, on which the engineer can absolutely depend. As its name expresses, it consists of combining and applying the thermometric apparatus and electric currents, so as to ascertain the temperature and pressure of the water in the boiler. A tube, filled with water, descends into the boiler, so as to come just below the water line, and is bent in such manner as to come in contact with the boiler—this is securely fastened. In a branch at its upper end two glass tubes are fixed, also filled with mercury, so that the whole forms one mercury chamber. In one of the tubes an iron float is placed with a piece of platinum at its upper end; a standard is fixed to the upper part of the boiler, but insulated from it by the glass. At the upper part of the standard is a sliding piece, which can be moved up or down, and fixed by a screw. Over one of the tubes is a lever, which at one end has attached to it a wire that descends through a guide-hole in the cap into a tube, there being at the lower end of the wire a point of platinum, so that when the float rises there will be an electric circuit formed. Wires are attached which lead to a bell apparatus, such as is used in electric telegraphs, the object being to give notice of the rising of the steam after it has been down. A wire is conducted from the other expansion tube to another bell apparatus, and thence to the battery; by this arrangement, when the heat in the boiler rises above that which is proper for producing the desired pressure of steam in the boiler, an electric circuit will be completed, and the bell will continue to ring, and thus persons near or at a distance will be informed that the temperature or pressure in the boiler is greater than that which has been determined. The thermometric apparatus ascertaining the temperature, and electric apparatus indicating either near or at a distance when the temperature and pressure rise too high. At present one bell is used for each part of the apparatus; but any number can be simultaneously acted on by an electric current, the battery and connecting wires being suitably arranged.

Smee's battery has hitherto been used by Mr. Dunn, but this may be varied; the nature of the battery will have to depend on the extent of circuit and bell apparatus used. We have endeavoured thus briefly to give our readers some idea of Mr. Dunn's invention, which, however complex it may appear on reading (unaccompanied by the necessary explanatory diagrams), practically is one of the simplest and easiest managed that we have seen; it is very inexpensive, and not liable to get out of order. The signals which it gives are loud and audible, and long before danger is to be apprehended either from over pressure, temperature, or want of water. The invention will be shortly before the public, and we have no doubt it will receive that consideration and investigation which the importance of the subject so decidedly calls for. Mr. Dunn's apparatus was tried in the presence of several scientific gentlemen and practical men, who appeared highly satisfied with his explanations, and expressed themselves favourably of the merits of the invention.

THE AEGIS LIFE ASSURANCE SOCIETY.

The numerous and rapid additions to the existing establishments for the assurance of human life have, within the last 20 or 30 years, been most extraordinary, evincing, by their success, a great change in the habits of the people, and the growth of a more thrifty and prudent disposition among the middle and working classes of the community. We have for several years past paid particular attention to the principles, proposals, and

ORIGINALLY COMPILED AND FURNISHED IN 1943

DISTRICT OF ST. JUST.

[To be concluded in next week's Mining Journal.]

[The Commissioners of Inland Revenue having notified to us their resolve to charge with advertisement duty all reports having the agents' names affixed, we appealed to them in a memorial, setting forth that we, or the respective companies, derived no advantage therefrom—the only object sought, or obtained, being that of affording to the mine adventurer and public the greatest guarantee we could for the truthful and *bona fide* nature of the statements periodically set forth, by authenticating them, and thus fixing a responsibility on the writer. The Commissioners have replied, that “the reports, with names attached, are advertisements, and that duty will be charged thereon.” We have no alternative but submitting to their dictum. How far the Commissioners are correct in the view they take, our readers can judge as well as ourselves;—we can but hope that, if they will not see the error into which they have fallen, and rescind the orders they have issued. All reports inserted under this head, however, may, as heretofore, be considered as furnished by the regular agents of the company; and we shall carefully guard against the publication of statements which cannot be relied on as correct.]

AYLESBOROUGH.—There is every likelihood of meeting with a good course of tin within a few fathoms of the cross-course, but first west of Henry's shaft. I am given to understand, that the bunch of tin gone down to the west of the shaft is dipping west—consequently the level driving has not reached the tin grounds, but the lode and strata are alike favourable. I have every reason to expect a good course of tin, the shaft being now 10 fms deeper than the old working, and the only thing to be done is to sink the shaft a few more fathoms. The water in the shaft was underground a day or two since, but was unable to see the bottom, the water being in the machinery was undergoing some repair; however, I intend to be at the mine again in a day or two.

BARRISTOWN.—The lode in the winze sinking under the 16m. level is about 18 in. wide, with a small branch of lead through it, about 3 in. wide; the lode in the back of the adit is producing about 8 wts. of lead per ft.; the lode in the adit end is divided into small branches of lead. The surface of the ground about it looks a little better; the lode in the back of the adit level (west of the shaft) is producing about 1½ ton per ft.; the lode in the slopes, in the bottom of the adit level, is still better; we shall unwear a good deal of the eastern bottoms under the adit level this month, where the lode is much better for lead than the part we are now stopping.

BEDFORD UNITED.—At Wheal Marquis, the engine-shaft is progressing favourably; there is no alteration in the 103 fm. level east. There has been no lode taken down in the 90 or 70 fm. levels east. In Burley's winze, under the 90 fm. level, the lode is worth 6 tons to the ton, and is 18 in. wide, and yielding 3 tons of ore per fm. The pitches are without much alteration.

BRYN-AR-IAN (SILVER LEAD).—The engine-shaft is now down 8 fms. below the deep adit level; the lode continues large, and yielding about 15 cwt. of lead ore per fm. The slope back over the deep adit level is now producing $1\frac{1}{2}$ ton of lead ore per fm. The slope back and bottom of the shallow adit level is now yielding $1\frac{1}{2}$ ton of lead ore per fm. The lode in the adit level driving east from the shaft is large, with several small branches of ore.

CWM ERFIN.—We have just finished paying, and have set the following bargains:—The 20 fm. level east by six men, at 120s. per fm. The slope from the end, 6 fms. west, six men, at 60s. per fm.; ditto, 6 fms. west of ditto, four men, at 50s. per fm. The slope west of engine-shaft, two men, at 45s. per fm. The 20 fm. level, west of whim shaft, one man, at 20s. per fm., producing 1 ton of ore per fm.; this slope behind this end is worth 15s. per fm.; the slope 6 fms. west of ditto, 100 fm. The slope west of engine shaft is yielding 4 tons of ore per fm. Our 20 fm. level, west of whim shaft, is poor. We are getting on pretty fast with our dressing, and the machinery working well.

EAST TAMAR CONSOLS.—The engine-shaft has been sunk 3 fms., and is now 7 fms. under the 70 fm. level. The progress made has not been so satisfactory as I could wish, in consequence of our having experienced some difficulty with the men:

shaft have now a new pier, and I hope we shall do better. The face and the bottom of the shaft has yielded, in the course of sinking the last shaft. Very good stone has been found in a branch that appears to be lengthening as we proceed, and holds out a fair prospect of its continuing to increase. The 70 fm. level, north of the engine-shaft, has been extended 8 fms. 5 ft.; the present end is 22 fms. 3 ft. 6 in. from the shaft; the lode for 10 fms. at 15 fms. has been almost unproductive; but, for the last 8 fms., it has left ground that will set at a moderate tribute; the same level south has been extended 4 fms. 2 ft. 6 in.; the present end is 34 fms. 6 in. from the shaft; and, for the greater part of this distance, the lode has yielded good working; at present, it is worth from 3 to 6 cwt. of lead per fm. A few fathoms south the lode has been almost unproductive; but, as we have a wane sinking will be communicated to this level. The 60 fm. level north has been extended 4 fms. 2 ft. 9 in.; and the present end is 55 fms. from the shaft; the lode in the end is 3 ft. wide, and worth 10 cwt. of lead per fm.; in the slopes in the back of the level the lode is worth 14 cwt. of lead per fm.; the same level south has been driven 1 fms. 1 ft. 6 in., and the present end is 60 fms. 1 ft. 7 in. from the shaft; the lode in the end is 20 in. wide, and worth from 5 to 6 cwt. of lead per fm. The 11 fathom level, north of Churchline's shaft, has been driven 14 fms. 2 ft., and the entire distance extended 14 fms. 2 ft. 6 in.; the present end is 14 fms. 6 in. from the shaft; the lode is now, and has been, for the whole distance, worth from 7 to 8 cwt. of lead per fm.; in the back of this level the lode is worth, on an average, 9 cwt. of lead per fm.; the same level south has been driven 10 fms. to Churchline shaft; and a good lode, discovered in the bottom of it, will yield 15 cwt. of ore per fm. Churchline shaft has been cleared down and made complete to the 26 fm. level, below the deep adit, or 73 fms. from surface; we have also cleared this level home to the end 13 fms. 3 ft. north, and driven the end about 1 fm.; the lode is 1 ft. wide, and yields good saving work; we have great expectations from laying open this ground; this level has also been cleared 12 fms. south of the shaft; and there is no ground standing that will set at a moderate tribute. The pitches are looking well, and the tribute decreases, and gets much improved; we, therefore, confidently expect that we shall continue to increase the returns, and that the next sampling will be 75 tons; the next will give 95 tons.

EXMOOR WHEEL ELIZA.—We have opened on the course of the cannon-
lode, in the 24 ft. level, between 2 and 3 fms. We feel great pleasure in being in a
lode, which shows such marked improvement has taken place on this lode during
the past week; it is still 3 ft. wide, but the ore is better, more internalized with
masses of gooson and large rocks of mundle. Nothing can exceed the interest-
ing indications of this lode; were there no other in the sett, its present appearance
and character would warrant any necessary outlay; the cross-cut in the 24 ft. level,
alluding towards the great north lode, is progressing very fairly; and there is but little
doubt, if the outfall will be intersected about the first of September. We know not an-
other mine so likely to rival in riches the Great Devon Concession. We are not
water. Everything connected with the working operations are more than fairly

HOLMBUSH.—The water is now in fork at the 132 fm. level, and we have resumed driving the north end to intersect the easter part of the main lode. The ground at the 120 fm. level, south-east of Hitchen's shaft, is a little more favourable than it has been. The lode in the 120 fm. level south is 4 ft. wide, composed of quartz and lead, worth 62. per fm. The lode in the 110 fm. level south is 3½ ft. wide, composed of quartz, pruned lead, worth 62. per fm. We have this day set the men to drive the 100 fm. level east,

KIRKCUDBRIGHTSHIRE.—The lode in the engine-shaft is above 5 feet wide, with good stones of lead on the south part, and a kindly spar. The lode in the 50 and east is about 18 in. wide, with a small branch of lead in the flooken part, v. very kindly. The lode in the 50 west is 1 ft. wide, and still unproductive. The lode in the 40 fm. level west is 18 in. wide, a fine spar, yielding 7 or 8 cwt. of lead to the fm. The lode in the 30 fm. level under the 40 is 18 in. wide, a fine spar, and occasionally a good stone of ore. The men in the cross-cut in the 40, driving south, at the bottom of the winze, have very favourable ground, and expect the lode in a few days.

LEWIS.—The lode is exposed over a new day's work.
9, east of engine-shaft, on the south branch, is 2½ ft. wide, with some spots of tin; the
day last; the 70, east of ladder road winze, on the south branch, is about 7½ ft. across,
is the 70 west, on the south branch, the lode is small, producing some rich stores of
tin; the 60, at the top of this level are producing good quality work. The 60 east
of pump-shaft, on the north branch, is 1 ft. wide, worth 1 lb. per ton; the 50, on
lode's branch, is 1 ft. wide, worth 1 lb. per fm.; In the winze sinking below the 60,
on the south branch, the lode is 2 ft. wide, worth 124. per fm.; the winze sinking below
the 50, on the south branch, is 2 ft. wide, worth 124. per fm.; the stopes in the back of this level are
yielding rich quality work. The 50 east of the 60, is 2 ft. wide, worth 124. per fm.

five: the lode in the 50, east of the engine-shaft, on Cock's branch, is 8 ft. wide, worth 10¢ per fm.; the lode in the 50, west of copper ore shaft, on Cock's branch, is 18 in. wide, worth 9¢ per fm.; in the 50 east of copper ore shaft, on Cock's branch, the lode is 18 in. wide, worth 6¢ per fm. The ground in the 40 south is still favourable. The 30 west, on the south branch, is worth 5¢ per fm. The south lode in the 10 fathom level east is worth 6¢ per fathom.

LLWYNMAELER.—We have opened on the lode in the 14 ft. level west for 12 ft. wide, and find it ore throughout; it is 5 ft. behind the 14 ft. level, and that we have opened this width, and from this, and the present appearance of the lode, I am led to believe that we have a junction of the north and south lodes, and that the same are now in the same position as at the 14 ft. level. We have now a lode 12 ft. wide, and we are having a good and long piece of ore ground westward. In the London shaft we are getting into a strong powerful lode, with fine lumps of ore in it, and considerable quantities of water springing out. I have no doubt I shall be able to give a flattering report of the result of the present trial, and of the success of the trial of picking and dressing, and about the same underground, and 12 ft. on Aberystwith.

MENDIP HILLS.—During the past week I have worked the furnaces two days; the produce of lead continues much the same as on former occasions—viz.: about 3 cwt. of lead per ton of slags. In Charterhouse Valley we continue to lay open the cutting towards the eastern part of the valley, where I find the slagstuff to be about 16 ft. thick, much the same as regards quantity and quality as it has been for several weeks past. The men are now employed in the cutting of the slag, and I have to thank my utmost exertions to carry out the necessary operations for the efficient working of this part of the company's property. The different carriage roads are nearly completed, and the men are at present engaged in making the drain for taking off the water from Blackmoor dressing floors, and removing and levelling the ground for the dressing-floors, and the new workshops are completed, and hope to see the masons finish the roof by this evening.

MINERAL COURT.—I have inspected this mine, and found the sett to be extensive, containing several lodges embedded in granite strata, such as is favourable to tin; in one of these lodges also, several have been taken up in the vein, and driven as far as 25 fms. down, elevated about 100 ft. from the surface, and nearly much of the back of the adit has been taken away for the tin it has produced. The operations noticed have been carried on principally by former parties; the present party have been induced, from the prospects of the mine at the adit level, to erect a water-wheel of 36 ft. diameter, for pumping, by virtue of which they have sunk the mine 16 fms. below the adit, but have only seen the lodge about 8 fms. down, and have driven a level at that depth 25 fms., which has produced 3007. worth of tin, and in the end at present the lodge is from 3 to 4 ft. wide, and runs 127. to 157. per fm. for tin; and in a winze sinking below the adit, 7 fms. east of this 8 fm. end, there is a large tin lodge so, on the whole, it is pretty much more productive at the 8 fm. level, than at the adit level. The engine shaft is 7 fms. below the 8 fm. level, and they intend to sink it 13 fms. below, and then to open a level at that depth, which I consider a very fair speculation to go on with; and the operations conducted by the present party have been with great economy, and in a good mining-like manner, and I believe the chances to be favourable, with perseverance.

SOUTH TAMAR CONSOLS.—Having, in my monthly reports, given you detailed particulars of the current operations, it may not, perhaps, be necessary on the present occasion to repeat the same. I have, however, to report that, at the general meeting, and of the future prospects of the mine. During March and April our operations were much impeded by the impossibility of procuring a sufficient number of horses to keep the whim going. The completion of the new engine has fully relieved us from this difficulty, and enables us to proceed in clearing the shaft, and all such levels as we consider desirable for the present. The shaft is cleared, and made complete to a depth of 90 fms. south, and 20 fms. north, and 18 fms. east of the present level. At this point it is very small—not much larger than an ordinary mine. It will be quickly cleared, and, in all probability, we shall be able to examine the lode in the deepest level by the end of the present month. The 90 fm. level is cleared 28 fms. south, and 20 fms. north of the shaft, but no whole ground has yet been opened. The 80 fm. level has been extended 18 fms. south on the course of a most promising lode, and it has yielded out 100 tons of ore of 99 cts. of fine gold. The 70 fm. level has also yielded out valuable tribute ground. The 70 fm. level has been extended 7 fms. 4 ft. 3 in.; the lode has been almost slightly productive, but there is no doubt it will improve in the present month. The 40 fm. level has been cleared 50 fms. south, but we are not yet home to the end, and can do more for the present, in consequence of the level being so low and narrow. In the 30 we are able, after working 15 fms., to get the water nearly to the end, in ground which has been already shown in brine, and the water back to the shaft in this level which will effect a great saving to our engine. I cannot as yet speak confidently as to the quantity of ore that will be raised this month, but, I think, we may calculate on having about 25 tons by the end of this month. All the workings, so far as we have seen, tend fully to confirm the favourable reports of the old men, and the impropriet way in which the mine was formerly worked. I have no doubt, but that the mine will be soon in a position to meet the cost of working, and afford ample remuneration for the capital embarked.

SOUTH WHEAL TRELAUNY.—The engine-shaft is in course of sinking with 9 men, and ground favourable; water just the same as when last mentioned; engine continues to work well.

TRELEIGH CONSOLS.—Garden's shaft, below the 113, is sinking in the country south of the lode, and is down 5 fms. In the 113, west of ditto, the lode is 34 ft. wide, poor. In the 93, west of ditto, the lode is 18 in. wide, worth 42 per ton, still looking kindly. In the 70, west of ditto, the lode is 10 in. wide, with stones of ore. In the 60, west of ditto, the lode is 24 ft. wide, with stones of ore, and is looking kindly. Wheel Parent shaft, below the 20, is sinking in the country, and is down 5 fms. In the 20, east of ditto, the lode is 2 feet wide, not much ore, but it has a kindly appearance; in the 20, west of ditto, the lode is 18 in. wide, poor; the 20 cross-cut south is driving in the country, and looking kindly. In the 10, east of ditto, the lode is 18 in. wide, and is sinking from 67 to 32 fathoms, and it is a very kindly lode; we have raised 2 tons of good ore from this level during the past week.

WHEAL BADWEN.—Our costean excavations being *pre-arranged*, and the bearings of the lodes found to be parallel with that of *see old Freestock*, it also very particular in character, as recommended by Cassin, the adit level was *con-* sidered, and the adit was driven about right angles from the point B, on rough sketch, the drivings of which, agreeable with my dialling and calculations, will be about 25 fms.; and with the view of testing the ground more accurately, I have set only 10 fms. for the present, at 15s. per fm. I have also set the walls of a small locking-house, for the men to change in, as well as for security of their tools and materials, at 12. bargain.

WHEEL TRELANA, N.Y.—Phillips's shaft is sunk 8 fms. and the 72 fm. level. The lode in the 72 fm. level, north of this shaft, is 3 ft. wide, and worth 10¢ per fm. At the same level south the lode is 2 ft. wide, and worth 8¢ per fm. In the rise in the back of this level north the lode is 3 ft. wide, and worth 9¢ per fm. The lode in the 32 north is 4 ft. wide, and worth 20¢ per fm.; all the slopes in the back of this level are working very well. Trelanda's shaft is sunk 18 fms. under the 52 fm. level; the ground continues as was last reported; the lode in the 52, north of Trelanda's shaft is 3 ft. wide, and worth 10¢ per fm.; the lode in the 52, south of Trelanda's shaft is 3 ft. wide, and worth 10¢ per fm. The lode in the back of the 42, north of this shaft, are yielding fair quantity of ore. In the north mine, the lode in 40, south of Smith's shaft, is 4 ft. wide, and worth 5¢ per fm.; in the same level north the lode is 2 ft. wide, and worth 5¢ per fm. The lode in the 30 north continues as last reported; the lode in the winze under this level south is 2 ft. wide, worth 10¢ per fm.; this winze is sunk from 10 to 11 fms. under the 30 fm. level. The lode in the 45 and 55 fm. levels, extending from Trehana boundary north, are much as was last reported. On Saturday a parcel of lead ore, computed 195 tons, for sale on London, the 21st inst.

WHEAL VINCENT.—In sinking on the south lode we are breaking good work for tin; I have this morning tried some of it after being stamped, and find it to be most excellent quality. I forgot last week to mention that a pair of men had taken a fetch on tribute on the south lode, to the west of the shaft now sinking; they have broken most excellent pile of tin, inasmuch that another pair of men have taken a pitch at it, and I trust they have to sink a shaft to intersect the one at their own cost. They have pitched this morning (May 17). Our stampers are continually at work, both day and night, and we have sufficient hands on the floors dressing; and in driving on the north lode, we have cut a great deal more water, which must proceed from the old workings some fathoms above us. We intend to-morrow to commence sinking and stoping in the bottom of those old workings, where there is at present a good branch of tin. We were not yet reached the lode in the streamers' deep cutting, but are daily expecting it, and when the wheel is completed, and we hope by Tuesday to have our shaft a sufficient depth to allow in the lift, so as to commence pumping; the ground in the shaft is very favourable for the tin-bearing granite. As our machinery is near the tinpike-road, ascending from Launceston to Bodmin, we have many inspectors; but, on account of the going of the coach, I am afraid they cannot take a minute's survey, therefore in future I trust the driver will slack his hand as he passes on, that these statements may in future be correct.

IMPERIAL BRAZILIAN MINES.—Gold report—

SOUTHERN BRAZILIAN MINES.—Gongo report.—									
From Gongo—February 23-24.....	Lbs. 2	7	0						
" " " 25	}	1	10	3	0	—Lbs. 4	0	10	0
" " " 2									
From Bananal—Feb. 23-24		1	9	16	0				
" " " 25-26		4	6	0	0				
" " " 27		0	11	15	0				
" " " 28	}	10	6	1	0	—Lbs. 17	9	12	0
" " " March 2						—Lbs. 21	10	2	0
Total from 1st Jan.—Gongo	Lbs. 31	0	13	0					
" " " Bananal		46	11	7	0	—Lbs. 78	0	0	0

393 lbs. 11 oz. 10 dwts. 3 grs. of gold dust (value about 4500c.) has arrived at Falmouth, Penzance docks.
 (No letters by this arrival.)

NATIONAL BRAZILIAN MINES.—*Cocos, Feb. 23.*—The improvement the gold returns, before alluded to, has taken place at Hartley's eastern stop, where there has been some very promising samples obtained. The footwall of the layer, at this place, seems to be turning considerably towards the south, which, if it continues in this direction, will be the cause of the Cayaco and the Bandeira veins coming in contact long

Cocao produce— from 14th to 23d Feb.	Mts.	7	7	2	46	
Cocao ditto— from 23d Feb. to 23d March	11	4	3	71	19	3 6 45
Cocao ditto— from 23d to 16th Feb.	3	1	7			
Culaba ditto— from 16th to 26th Feb.	2	3				16
Culaba ditto— from 26th Feb. to 6th March	1	2	26	5	5	5 63
Total produce.....	Mts.	24	4	4	36	

ST. JOHN DEL REY MINES.—*Morro Velho, February 17.*

Cash.—It was to be expected that the board would feel uneasy at the great increase in the monthly costs; they are aware that it all would fall upon the same subject, but acknowledge that on my part this uneasiness has since yielded to the close investigations I have instituted, and to the considerations alluded to in my letters to the board of directors. The board, after the 15th of January, 1890, have been fully satisfied that I cannot help anticipating a similar result in the opinions of the board, more especially when they reflect that these costs, heavy though they be, have been incurred in the execution of works of vital importance to the future, as well as to the present, welfare of the concern; some of them, such as the new stamps and the amalgamation-house, already fully re-productive. When they reflect that by the means of this very expenditure I have been enabled to increase the profits of the concern (which after all must always be the object of the board) from 1887, when the profits were 20 per cent, to 1889, the last months of Mr. Herriag's administration) to 39.60, being the average profits of the last three months, equal to an increase of upwards of 200 per cent. The board justly remark

Showing that in 1948 an increase of 18 per cent. in the cost has been attended by an increase of 50 per cent. in the profits. In 1948 the cost was somewhat higher than in 1947, say 478/2, but the profit was only 14,920/-; and, consequently, in comparison with the year 1948, would show results still more favourable to the latter. With regard to future costs, the board remark that "the Powle's stamps being now in full operation, the expenditure under this head will cease, and will be limited to sustaining the efficiency of the existing stamping-power." This is perfectly correct, and yet I do not see the probability of any important reduction in our present rate of expenditure, seeing that we no sooner get rid of the expenditure on stamps, than we have undertaken fresh works, which though not apparently so remunerative, are nevertheless highly important for the future welfare of Morro Velho—I mean the two new inclined planes, one in the Bahu, the other in the Cachoeira, besides the continued prolongation and alterations of the original line in the last-mentioned mine. We are also preparing to erect new stone houses, steam-engine, smithy, rake for slitting, tunnels to be completed for new water course for Chrysotile water, and a tunnel to be used as a main water supply, a third hauling machine, new wheel for Herring's stamps, besides sundry matters of minor consequence.

Gold Extruded to date, 6400 cits. from 395 5-10ths cubic ft. of sand (being the produce of nine days' stamping), 16 1-10th cits. per cubic foot.

Stamps Working 16 days, 9473 heads average.

Supply of Stone continues to be middling—sometimes, but not always, permitting us to reject a small portion of the killas.

Feb. 27.—Gold extracted to date, 12,314 oits. from 767-63 cubic feet of sand (the produce of 18 days' stamping), 16-04 oits. per cubic foot.
Stamps Working 26 days, average 91-27 heads

Stamps Working 26 days, average 91-97 heads.

Supply of Stone—The great improvement which has at length happily taken place in the sanitary state of the blacks, has had a favourable influence on the supply of stone for the purpose of dusting. On the 26th and 27th of August, to throw out rather freely the inferior qualities, and leading me to hope for a corresponding improvement in the produce of the last 10 days of this month, which indeed is greatly needed, as for the present we are sadly behind hand, principally owing to the stoppages caused by the defective miller of the Powles stamps. We have been most unfortunate in these millers; already two have given way, and now a third is in so critical a state that I am dreading every moment to learn that one side of the stamps is again obliged to stop; meanwhile our smiths are working night and day preparing a new mill, and the place of the one which must have an injurious effect on the month's produce. It is to be hoped that picking the stone as we are now doing, may tend to counteract, though perhaps only to a moderate extent, this unfortunate state of things.

March 9. — Produce of February 19,433 lbs., equal to 187 4-10ths lbs. Troy, from 5369 tons of ore, yielding 3 6-10ths cts. per ton. This is apparently a short produce as compared with the results of the preceding four months; but, when you consider that this is the produce of a month of only 38 days, and the heavy stoppage resulting from the second breakage of the millier, or grudgeon, at the Powles stamps, I trust you will agree with me, that this is a fair and satisfactory result.

Stamps Working during the month, average 91-37.
The Supply of Stone has been tolerably abundant, owing to the diminished demands of the stamps. We have, in consequence, been enabled to reject about 240 tons, thereby very slightly raising the average standard of the month—say, to 3 6-10ths cts. In January, it only yielded 3 5-10ths cts. per ton.

Produce	19,493		
Less duty, 7 per cent.....	1,363		
Not cleared	18,130	at 75.7d	£36870 10 0

Net oltavas	18,120, at 7s. 7d.....	£3870 10 0
Leaves.....		£3239 7 4

Inclined Plains.—Good progress has been made with both; but, since Monday last, that in the Bahu has been suspended, to enable us to turn our whole force on the second section, where the dirt is much more required.

West Quebra Panella.—We have advanced about 144 fms. on this lode, but latterly it has been dwindling away, and appears now to be wholly stopped by a bar of killas. Capt. Treloar is, however, of opinion that we had lost the main lode, and had latterly been driving on merely a "tooth." He is now driving a cross-cut to endeavour to recover the main lode.

THE MAIN LODGE.—**BARRA MINES (SOUTH AUSTRALIA).**—The following are extracts of letters from Capt. Bagnall, dated Adelaide, Dec. 30:—"The mine is now in capital working order. All the shafts are down to the 30 ft. level, and we are getting the ores in good quantities. The mine has been found to have a large extent of all the lodges in a state to be productive. Hitherto we have only raised ores of high produce, as none others would stand the expense of transmission to Swansea. When we can take an average of 14 or 15 per cent. produce for smelting here, our quantity would be tenfold what we could otherwise send to Europe. We calculate that we could easily supply a smelting-work with ores of that average at the rate of 500 to 700 tons per month, and that even at the low rate at which the Barra Barra have agreed with the Schneider Company, our value to them for these quantities would be fully 30,000 £ per month. Hitherto all has been as well as could be expected. Our 30,000 £ have been sunk in bringing the mine into its present efficient working state. Our power and machinery are amply sufficient to carry us down at least as far again as we have gone, and that will be through that part of the mine from which, to judge by what is usual in most mines, the best results may be anticipated. We begin next month to sink to the 40 ft. level, and expect in three months to have it opened for tributes. Schneider's people are advancing rapidly with their smelting-works at the Barra Barra; they have also made an agreement with the Kambaitoo Mines. As the smelting-work, on rather a large scale, is nearly ready to be worked, we are sending a company of men to the Barra Barra to carry on the smelting. A company has also been formed in Van Diemen's Land for smelting; there they have coal in abundance, which they say can be taken at 2s. 6d. per ton."

From a letter dated Jan. 8:—"We have just had the first tribute work of the 30 fm. level assayed, and, to our astonishment, it is rather over 80 per cent. produce on a pile of 30 tons; the remainder of the tribute 30 per cent., making the whole over 40 per cent. I hope soon to ship what we have now from that level, and think it will be the best batch of ore that has ever been sent to Swansea."

The half-yearly meeting of shareholders in this association was held at the London Tavern, on Thursday last, the 17th inst.

JOSHUA WALKER, Esq., in the chair.

GEORGE THOMAS, Esq. (the acting director) having read the notice convening the meeting, and the minutes of the last meeting, which were confirmed, the CHAIRMAN observed that, previous to reading the report, he would, with permission of the meeting, make a few remarks on their present position. He believed the shareholders were all aware that, up to the close of the year, from all Mr. Henwood's previous reports, the directors fully considered that their undertaking was in a prosperous condition. But the dispatches in Jan., to their great surprise, put a very different construction on things. They stated, that at Bananal gold was only to be found in one place. After the most mature consideration, he could come to no other conclusion than that it was a losing concern, and took so gloomy a view of their affairs as to recommend the immediately winding-up the undertaking, and withdrawing their property from the Brazil. He need not tell the proprietors that so sudden an apparent frustration of their hopes, not only took them by surprise, but nearly overwhelmed them. After due consideration, however, they determined to watch the progress of things for at least another month, and immediately wrote to Mr. Henwood, desiring him to make no alleviation. They had since received no communication from the mine; but the returns of the daily gold proceeds since were, he was happy to say, more than sufficient to cover cost, and contradicted the gloomy view taken by Mr. Henwood.—The CHAIRMAN then read the following report of the directors:—

The report which the directors have to present this half-year to the holders of shares in the Imperial Brazilian Mining Association will not confirm the high expectations presented at the last half-yearly meeting. At the same time, the directors take leave to offer the opinion that, if in the last report the anticipations of the chief commissioner were too sanguine, the conclusions he appears to have drawn in his recent dispatches are, on the other hand, too hasty and gloomy. It is now the duty of the directors to submit a clear statement of the present condition of the mine, and to refer to the shareholders at the next assembly the results of the operations for the half-year ending on June 30, 1844, the produce of the mines afforded, and the expenditure incurred during the same period. The results of the operations for the last half-year, a surplus over the cost of working, notwithstanding the expenditure included many charges not likely to be permanent, and some that would not occur again. At the mine at Gongo the stamps gave a regular and fair monthly produce, with reference to the labour, &c., engaged, although they were employed on masses of deposit thrown aside years ago as of no value. In the course of the half-year, the gold from this source has been 66 lbs 8 oz. 1 dw. At Bananal, the produce of gold has been 75 lbs 4 ozs., and it must be observed that nearly the whole was obtained from the shaft only—viz.: Thomas's shaft; and that this shaft, sunk only in 1837, and the mine as a whole in our possession, has yielded nearly as much as the mine sunk in 1800, sterling per fm. At the close of the year 1843, the directors had to apply to the Imperial Government for the active intervention of the various members of the force in Brazil, most of the buildings were finished, and afforded accommodation to the establishment.

were finished, and showed accommodation for 100 men, and the additional pumping power sent to the main engine. The main engine, which was installed in September last, was regularly at work; a water-wheel (called Walker's) of 46 ft. diameter, had been constructed, and this, with three other wheels, were fully supplied with water; and, in anticipation of a demand for further power, the directors had prepared, in this country, the iron frame, &c., for another water-wheel of 60 ft. diameter, which is now on its way to Brazil and will be ready for use in the same pump well as the first water-wheel, and, in the meantime, the services of Capt. Joel Hittelman, who is about to leave for Brazil, will be seen by the subsequent part of this report. The above is the state of our affairs at the mine, as reported at the close of the year 1843. Letters of date early in 1840, gave a different aspect to the undertaking, inasmuch as they represented, from the large quantity of water in the mine, that the various parts of the mine could be worked for a long time, but that the quality of the water was such as to render it necessary to have recourse to the use of the pumps.

of water at the then deepest shaft (14 fms. under adit only) was too great to be overcome by the pumps then at the mine, and that to sink deeper was impracticable. This unexpected report of difficulties, considered by the chief commissioner to be almost insurmountable, at Bananal, greatly surprised your directors. They at once entered upon a careful, and as they believed a dispassionate review of all the circumstances of the case, so far as they were known to them, and (as appeared to the directors) the only difficulty to be overcome, was the quantity of water flowing into the mine, which had, however, been kept in check by the pumps then at work. They further observed that two of the water-wheels were not applied to the mine, the one being at work at a saw-mill, and the other at a corn-mill, and both on the stream higher up than Walker's shaft and wheel, and both those the directors are advised might be readily applied to the more important office of pumping the water from the mine, whilst the two mills could be placed lower down the stream. A deeper adit may be driven if requisite, in which case it could be undertaken at leisure, and not pursued more quickly than circumstances may require. Upon referring to the various reports of this property made while the negotiation was going on for the purchase of the lease, and subsequently, they observed that Capt. Joel Hitchens had based his estimate of the value of Bananal on the calculation of being able to sink the mine 40 or 50 fms. deep. At present a very small portion of this depth has been accomplished—the deepest shaft being only 14 fms. under the shallow adit. All these reports, which have been printed and circulated amongst the proprietors, show the abundance of the water to be contended against; but they, at the same time, convey the opinion that, with more powerful machinery, it would be overcome. The directors, therefore, at once determined to submit to the consideration and judgment of Captain Hitchens every paper bearing on the state of the mine, and to ask his opinion and advice. He readily undertook the task; and the following report the directors submit to the notice of the present meeting, which they believe will afford the same satisfaction and confidence to the shareholders, when published, as it did to the directors when they received it.

The letter from Capt. Joel Hitchens stated, that he had thoroughly examined the plan, section, and agents' reports of the Bananal property, as well as Mr. Henwood's recent report, public and private, and observed that when in Brazil in the service of the association, in 1845-6, his principal business was to make himself well acquainted with all particulars relative to the property, the mines in it having been selected for purchase, one of his greatest objects being, after finding the vein extraordinarily productive, to ascertain what surface power could be made available to effect the drainage and insure the means of prosecuting the mine in depth. He left the country, strongly impressed with the belief that there would be no impediment in carrying out the object. He had settled in his own mind the plan he thought most effective, the collection of all the available streams of water for moving the machinery, which he estimated at upwards of 4000 gallons per minute in the dry season; in the rainy one there was always plenty. He was, from the first, aware that there would be much water to contend with, and great caution in the arrangement of the machinery would be necessary. The water-wheels were too far from their works, and great friction and loss of power was occasioned by the length of the rods; and to work the mine effectively, it was necessary that a great alteration should be made in the principal part of the pumping machinery, and he had little doubt of arranging these matters so as to effect the prosecution of the mine to a much greater depth.

After further remarks in detail, and allusion to the property called Santa Rita, which he considers yet valuable, he states that he believes the conclusions arrived at prematurely. He then refers to Gongo Soco property, which he thinks may still be advantageously worked; and to carry out his views with regard to the effectual prosecution of the whole of the properties, he thinks it necessary to send from Cornwall two good mining men, and an experienced pitman, of practical mining knowledge. The good opinion he had previously formed of the Bananal property induced him to accept the terms offered by the directors as commissioner and principal mining agent, being strongly impressed that satisfactory results will follow efficient management.

Agreeing entirely with Capt. Hitchens' report, the directors inquired of him if he would at once proceed to the Brazil, and fill the two offices of chief commissioner and chief mining agent? Feeling himself deeply interested in the successful completion of the work at a mine he had so strongly recommended, he willingly agreed to the proposal, and to embark by the next packet on the 4th day, requesting, however, to be allowed with him one mining captain, one pitman, and a clerk of his own selection. In the letters of Mr. Henwood, before referred to, this gentleman gave as his opinion that, if determined to proceed further with the investigation of the lower levels at Bananal, it would be most expedient to make a large reduction of our force, and to economise our resources, pending the proceeding of the work in every way possible; and with the disinclination which has uniformly marked his conduct in his transactions with the association, he spontaneously offered to retire at once, should the board wish it, in order to assist the reductions in the expenses which he had suggested as desirable.

Under the above-mentioned arrangement, Mr. Henwood will return to England only a few months earlier than contemplated; and the directors take this opportunity of offering their testimony to the unvarying zeal, activity, and strict integrity, which have marked his conduct since he left this country on the important mission which so unexpectedly led to his engagement as chief commissioner in the service of the association, who, for so long a period, he has so ably assisted, and who, by his own efforts, has so much contributed to the success of the association, and who, by his own efforts, has so much contributed to the success of the association, and who, by his own efforts, has so much contributed to the success of the association.

As the directors feel they are now entering upon an investigation, the results of which cannot be certainly foreseen, they feel it to be essentially their duty to economise the resources committed to their care, and to adopt every practicable retrenchment both at home and abroad. The quantity of gold which has just arrived, per the *Penguin Packet*, (value about £5000), the directors calculate as sufficient to cover every existing expense of the association, besides which, the reserve fund, it will be remembered, is now £25,000, 31 per cent. stock. At the close of the last year the force in Brazil consisted of 515 persons, of whom four were mine captains, and 51 miners and artificers. The directors have already sent instructions to Brazil to reduce the expenditure, without pocketing the force below the present requirements of the mines; the captains are to be reduced to two, and the artificers and miners to 20. It is believed this force will be quite sufficient for the work to be carried on this year and part of the next, by which time it is hoped the object of uniting the two mines, should the board wish it, will be accomplished, and the field for operations greatly extended. There is good reason to expect that the gold raised as the works progress will be sufficient to meet a large portion, if not all, of this diminished outlay, and with an expenditure thus reduced, the directors believe that there will not be any necessity to call upon the shareholders for any further advance; at the same time, they beg it may be clearly understood, that they can give no pledge that circumstances, though now unforeseen, may not arise in the course of the investigation of the lower levels, which may necessitate an increase of expenditure for the half-year ending Dec. 31, 1845, having a debit balance only of £771 4s. 10d. instead of £17,172 13s. 7d., as it stood at the close of the previous half-year, is as follows:—

BALANCE-SHEET.	
Balance of statement 30th June, 1845	£12,172 13 7
General expenses—Gongo, Bananal, and London	£147 15 0
Salaries, Brazil—paid at Bananal, Gongo, and England	3930 19 2
Do, London	810 0 0
Less of new mines and properties at Bananal—balance of	54 16 10
Total	£22,146 4 7

Dr.		Balance-Sheet.			
Balance of statement 30th June, 1848		£12,172	13	7	13
General expenses—Gongo, Bananal, and London		£5147	15	0	0
Salaries, Brazil—paid at Bananal, Gongo, and England		3930	19	2	2
Ditto, London		810	0	0	9,918 14 2
Lease of new mines and properties at Bananal—balance of			54	16	10
Total		£22,146	4	7	7
Cr.					
Half year's dividend on stock, less income tax		£490	18	2	2
Proceeds of 34 per Cent. stock sold, reducing reserved fund to 25,000l. ..		5,238	15	8	8
Proceeds of gold from Gongo		£3140	15	0	0
Ditto Bananal		7191	19	2	10,332 5 4
Loans and investments in Brazil			3,242	6	6
Amount reserved on calls			2,364	10	0
Balance carried down			577	4	10

The directors would have wished to have been able to present a more satisfactory report on this occasion, but they, with confidence, anticipate the entire approval of the proprietors in the steps they have taken to develop more fully the Bananal property under the superintendence of Capt. Joel Hitchens, and the proprietors may rely on the continued exertions of the board to promote the interests of the association.

P.S.—The directors have pleasure in stating that the quantity of gold raised from the 1st of January to the date of the latest advices (the 2d March) amounts to 78 lbs.; the last day's produce from Bananal is 10 lbs. 6 ozs. 1 dwt.

Baron GOLDSMID observed, that there was nothing novel in the view of the case, as to the necessity of sinking a 50 fm. level. This was Mr. Hitchens' original calculation, and he always said, until such had been done, the mine would not be developed. At present it was only down to a 14, and since the melancholy announcement of Mr. Henwood, 10 lbs. of gold in one day, 6 lbs. in another, and other large average returns, had been received, which would render it madness on the part of the directors to adopt Mr. Henwood's recommendations. In fact, he would not have hesitated to have taken the whole responsibility on his own shoulders, and if it turned out a complete failure, no blame could attach to the directors.

Mr. GINSON explained, that Mr. Henwood was a good geologist and miner, but not a first-rate mechanic; while Mr. Hitchens possessed all the requisites of an experienced mechanical and mining engineer.

Mr. DUVAL, formerly chief commissioner to the association in the Brazil, also addressed the meeting in favour of their present prospects with proper management; and when the report and accounts were unanimously adopted, the director and auditor going out re-elected, and thanks having been voted to the chairman and directors, the meeting separated.

CARADON WHEEL HOOPER MINING COMPANY.

A meeting of shareholders was held at the mine, on the 5th instant, when a statement of accounts was produced, showing balance against the company of 2081 11s. 9d.—the unpaid calls amount to £201 4s. 6d. The accounts were passed, and a call of 80s. per share made. It was resolved to drive south until Pearce's lode is cut, and that the shaft be sunk until Daw's lode is intersected. A list of defaulters has been printed, and it has been determined that they all be sued for their arrears. The following reports, from Capt. W. B. Colman and John Seymour, and Capt. J. Spargo, were read to the meeting:—

May 2.—Since the last meeting the 58 fm. level cross-cut has been driven south 14 fms. 4 ft., making in all 61 fms. Pearce lode must have taken a more perpendicular position, else it would have been cut ere this, as we anticipated at the last meeting. In the present there is a large capel, and it is likely this may be the capel of the lode; the ground at present is rather hard for driving. We would recommend this end to be continued on with all force, to intersect and prove this lode. The 58 fm. level, going west on Daw's lode, has been driven in all 15 fms. 3 ft.; this lode has not yet reached the granite, and the last 7 fathoms it has turned off from its original course 7° or 8° south, which will make the distance to reach the granite still greater; the lode in the present end is split up and is not looking so promising as it did some fathoms back; we have no hopes of this lode, except it could be cut in the granite. With regard to the 59 fm. level, the winding mentioned at the last meeting as sinking under the 50 fm. level was carried down 24 fms., at which place, from the increase of water and hard nature of the ground, this place was stopped by reason of the great expense it would take to sink it; the lode in the bottom of the winze was promising, although small. The only plan to effectually prove this lode would be to drive a cross-cut to it at a deeper level; the distance this lode is off from the shaft is 33 fms. Agreeably to wish, Kito's lode, in South Caradon, was yesterday drilled, and, on being laid out at the surface, it was proved that it passes to the north altogether of West Hooper sett—the lodes of Hooper must, therefore, be West Hooper Agate lode. The effectual plan to prove the lodes would be to sink the engine-shaft down another lift, until it intersected Daw's lode, when a cross-cut could also be extended north to try the Caunter and Saw-pit lodes. This, and continuing on the 58 cross-cut south to Pearce's lode, is the only work we could recommend doing, unless it were to cut the Caunter lode at the 58 fathom level, towards which a cross-cut has been driven to within 7 feet of it.

May 3.—At your last general meeting held at the mine, on the 3d inst., I, with several other agents, was called upon to inspect the mine; and as you have repeatedly seen the statements of those most able and practicable men, respecting the bearings and underlay of the lodes, &c., I need not repeat it again. I will, therefore, confine myself to a few brief remarks on the observations taken while on the mine, and the reason why I have recommended sinking 12 fms. deeper, and to stop all other operations, with the exception of driving to cut Pearce's lode, as you have only a few fathoms further to drive. It appears you are now at that depth where the lodes just enter the granite—the granite crossing the lodes somewhat to the north of the direction, which causes them to be disordered; and although the mine is a sufficient depth to extract mineral, yet there are reasons that ought to be considered as the result of the lodes not being productive in this most mineralised district. I find, from the surface to the depth where the lodes enter the granite, that in every level the lodes do not continue regular with well-defined walls; neither do I consider the clay-slate to be congenial for copper, although so far as the lodes do continue regular they are a fair size, and not without mineral; but notwithstanding, if the lodes were productive, it will be in granite, and not in the clay-slate. It is true South and West Caradon have made rich bunches of copper, much shallower than the depth of this mine, but their lodes from surface are entirely in granite; I, therefore, consider that all that has been done above granite, with the exception of sinking the shaft, not at all beneficial; and the only chance is to sink to prove the lodes a few fathoms deeper in granite. The conclusion I come to is this, were I the largest shareholder in this mine, I would not say stop, after laying out such a large sum, until I saw the lodes take their proper bearing in granite.

HERODSFOOT MINING COMPANY.

A general meeting of shareholders was held at the mine on the 10th inst., when the statement of accounts was audited and passed. A resolution was also passed, directing the pursuer to apply for a reduction of dues.

The following is an abstract of accounts presented to the meeting:—

Balance of last account	£ 577 12 8
December cost and materials	990 12 0
January ditto ditto	1223 8 10
February ditto ditto	1451 17 3
Calls received since last account	£ 176 5 10
December last ore sold (100 tons)	1105 0 0
January ditto (110 tons)	1245 0 0
February ditto (101 tons)	1158 19 6
Overweight in former parcel, 51 13s.; sundries, &c.	10 13 0
Balance	549 7 5

The following report, from Capt. Medlen and Dunstan, was read:—

Since our last general meeting, the 106 fm. level has been driven south 11 fms. 4 ft., where the lode is 4 ft. wide, and producing half a ton of ore per fm. This level has been driven north 8 fms. 4 ft., where the lode is 14 ft. wide, producing good stones of lead. The 94 fm. level has been driven south 37 fms. 4 ft., which is 9 fms. south of Windsor shaft, where the lode is 24 ft. wide, yielding 7 cwt. of ore per fm.; this level has been driven north 15 fms. 5 ft., and a rise up up 4 fms. 3 ft., and holed to a winze; the lode in this end is small and unproductive. Here we are within a few fathoms of our north shoot of ore, which is generally 30 fms. in length, and reaches as far as the north side. The 106 fm. level north also gave the north shoot of ore. The 82 fm. level has been driven 10 fms. 4 ft. north of the slide, where the lode is 1 ft. wide, producing half a ton of ore per fm.; this level has been driven south 4 fms. 4 ft., and west 1 fm. 3 ft., where the part of the lode cut into is small, but producing saving work. We are still cross-cutting the main part of the lode; this end is 20 fms. south of Windsor. The 72 fm. level has been driven north 9 fms., which is 25 fms. north of the slide; it is at present suspended, and we have cross-cut west 3 fms. which has proved to be unproductive; the lode here in company with the flookon course is small and poor; this end is 36 fms. south of Windsor shaft. The 52 fm. level has been driven south about 8 fms., where the lode is 1 ft. wide, producing 5 cwt. of ore per fm. The stopes in the 106 fm. level will yield, on an average, 12 cwt. of ore per fm.; reserved ground in the back of this level 20 fms. in length. The tribute ground in the back of the 94 fm. level will yield a fair quantity of ore. The stope in the back of the 82 fm. level north are at present rather poor, and the ground getting short; however, there can be some tribute set here for several months to come; the stopes in the back of this level, south of Windsor shaft, will produce 8 cwt. of ore per fm. The stopes in the back of the 72 fm. level north are suspended, except one, which we intend setting as a tribute pit next month; the stopes in the back of this level, south of Windsor shaft, will yield half a ton of ore per fm. We have fixed our new plunger lift, and the shaft is sunk 5 fms. below the 106 fm. level, and in good course of sinking, where the lode is 3 ft. wide, yielding about 1 ton of ore per fm. The 12 fm. level, south of the 106 fm. level, has been driven 7 fms. 4 ft., and we have cross-cut west 3 fms., which has proved to be unproductive; the lode here in company with the flookon course is small and poor; this end is 36 fms. south of Windsor shaft. The 52 fm. level has been driven south about 8 fms., where the lode is 1 ft. wide, producing 5 cwt. of ore per fm. The stopes in the 106 fm. level will yield, on an average, 12 cwt. of ore per fm.; reserved ground in the back of this level 20 fms. in length. The tribute ground in the back of the 94 fm. level will yield a fair quantity of ore. The stope in the back of the 82 fm. level north are at present rather poor, and the ground getting short; however, there can be some tribute set here for several months to come; the stopes in the back of this level, south of Windsor shaft, will produce 8 cwt. of ore per fm. 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The following report was read to the meeting:—

May 9.—The lode in the 50 fm. level, south of Barratt's shaft, is 4 ft. wide, and worth 121. per fm.; we are preparing to sink a winze under this level, north of the shaft, near the boundary, and hope to sink to Wheal Trelawny 62 fm. level in two months; the lode in the back of this level is looking well. The lode in the 40 fm. level, south of this shaft, is 3 ft. wide, worth 51. per fm.; the lode in the back of this level is also looking well. Pollard's shaft is sunk to the 50 fm. level, and we have commenced driving west, and hope to cut the lode at this level by the end of the present month. The lode in the 40 fm. level, north of this shaft, is 2 ft. wide, and worth 161. per fm.; the lode in the back of this level is looking exceedingly well, producing nearly 2 tons of lead per fm.; the lode in the same level south is 1 1/2 ft. wide, composed of can, spar, and lead, worth 41. per fm.; the lode in the back of this level, is split into two or three branches, being disordered by a slide. The lode in the 30 fm. level, south of this shaft, is also disordered by a slide, and is now split into branches, composed of can, spar, barytes, and lead; the lode in the back of this level is also looking well. The lode in the 15 fm. level, south of this shaft, is 6 in. wide, composed of can and lead, with every appearance of an improvement shortly. In conclusion, we beg to say that from our present prospects we can fairly calculate to raise about 60 tons of ore per month in future.

CONSOLIDATED MINES.—The usual two-monthly meeting of adventurers took place at the account-house, on Wednesday last, when the accounts, as follows, were passed, showing:—By balance from last account, 471. 2s. 2d.; ore sold, deducting dues, 7075. 3s. 8d.—7122. 5s. 10d.—To costs and merchants' bills, 7059. 8s. 3d.: leaving balance in favour, 621. 17s. 7d.

LWYNNMAKES MINE.—The two-monthly meeting of adventurers was held on Tuesday, the 15th inst., at the office, Cornhill-court.—The meeting was well attended, and great satisfaction was expressed at the flattering prospects of the mine, in proof of which it was stated that the call of 10s. per share, due on the 3d of May, had been fully responded to by all the shareholders, and consequently no shares were forfeited. The balance in favour of the mine was declared to be 2242. 19s. 9d. after paying the expenses and costs to the end of March, and including a sale of 12 tons of lead ore, producing 1451. 9s. 6d. It was further stated that a few more tons were about ready for market. Mr. Murray was requested to visit the mine and make a report. The meeting then separated.

QUEBEC MINING COMPANY.—Mr. O. H. Mathews, the superintendent of the mining establishment at Mica Bay, forwarded his usual monthly report to the directors at Quebec on the 9th March last, from which it appears that Bonner's adit and Tram road level was communicated to Albert's shaft on 23rd Feb. It is now about 250 feet in length, and has been cut through solid chlorite slate. There had been a greatly increased cost for draining an accumulation of water caused by very heavy and continued rains. In driving, the men met with a lode from 2 to 3 ft. wide, composed of quartz, chlorite, rich copper ore, zinc and silver blende, argentiferous galena, &c.; but they had not yet been able to determine if it be a part of Paterson's lode, or one of the cross veins—it would, however, yield a produce of from 50 to 60 per cent. These observations refer to the west end of the mine. In the east end, No. 2 cross-cut, in shallow adit level, was 70 feet down, the width of the lode 45 feet, and highly promising. It is a champion lode, and traversed by leaders of rich grey sulphurets and oxides of from 40 to 60 per cent. The stamping department and saw mills were in an advanced state. Smelting department, roads, and other surface work were also progressing favourably. He further states that "The weather had undergone a great change during the week—ther. 30 above zero at 6 A.M.—so that I presume this will be the last land mail for this season; if so, it will be at least six or seven weeks before I can have another opportunity of again communicating with the directors. But being anxious to communicate with you up to the last possible moment before the mail left, I visited the mines at an early hour this morning, and have much pleasure in adding to my report of the 6th, that the lode in cross-cut No. 2 of the shallow adit continues to improve, and is at this moment worth from 60L to 70L per fm. We are expecting to communicate the deep adit level to last year's working every hour."

MINING NOTABILLIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

GOOD MINING PROSPECTS.—A correspondent writes to us—"What do wise people enter into mining adventures for, but the expectation of good dividends? Then (he adds) take the advice of an old adventurer, and try your luck in one or all of the three following concerns, which will declare dividends, out of clear profits, either in June or July, and likely to continue every two or three months:—TAMAR, with the smelting-works, are now out of debt, and making large profits; I can scarcely point out any other concern possessing such secure advantages under the name of mining shares. Then there is TINCROFT, with a new lease of 21 years, at the low dues of 1-24th, the averages being 1-15th or 1-16th; this mine is making great profits, and very much improving. CONSUMOR is under the best of management (as are the other two), has now, as it is termed, turned the corner, and expected to pay dividends every two months; lease 17 years to run, at 1-20th dues. The bottom of the shaft is reported to be worth 40L per fm. in April, and now improved to from 120L to 140L by a disinterested captain, employed to view the mine for a shareholder. Shares in this mine may be, in a short time, worth hundreds per cent. more than at present."

EAST BULLER.—This sett, which has occupied some time in making the necessary arrangements, is now completed, and operations have commenced under a very influential company. This mine joins West Buller on the east, and has the South Basset, West Buller, and Wheal Buller lodes; is bounded on the south by Penrithal, on the north by Wheal Beachem, which sett is also included in this. R. H. Pike, Esq., is the pursuer; and Capt. James Evans, jun., of North Pool, the manager.

WEST BULLER.—This mine continues to look well; the shaft, which is sunk 8 fms. below the 14 fm. level, will produce 5 tons of ore per fm.—that is, 6 ft. long and 6 ft. high. The 14 fm. level is extended east 12 fms. through ore ground, and will yield on an average 7 1/2 tons per fm.; there is a winze sinking below this level which is now sunk about 4 fms., and will now yield 6 1/2 tons per fm.; the 14 fm. level is driven west of the shaft 21 fms. through ore ground, and will produce on an average 5 1/2 tons per fathom; the present end will produce 4 1/2 tons per fathom. We are also informed by an eminent mine agent who has recently inspected the mine, that, according to present prospects, they can raise fairly 500 tons of ore per month, worth 6L per ton.

OLD WHEAL PROSPER TIN AND COPPER MINE.—The district of St. Austell is generally considered to be one of the finest tin districts in the county, and the above is situated in the parishes of St. Ewe and St. Mewan, bounded on the west by the Great Hexas, and on the east by the Great Polgoth Mines, and is three-quarters of a mile in extent on the run of the lodes. The Hexas lodes traverse its entire length, and the south lodes of Polgoth run through part of the sett on the north. It is said that this mine has been well known to the mining community for the last half century; and that it presents greater surface workings than almost any other mining property, and its proximity to the two mines mentioned above speaks much in its favour, particularly when taken into consideration with its highly favourable indications and the number of lodes visible. The strata is represented as of a highly favourable character, being a free light killas, very easy for driving, and standing safe without timber. Copper ores have been found in clearing up the old workings, with a produce of 45 per cent. The grant is for 21 years, at 1-18th dues, a lease of which is to be transferred to the company, including all the machinery, whims, ropes, stamps, tools, burning-house, dressing-floors, &c., for the sum of 800L; and it is proposed to raise a capital for working the mine of 5000L, in 1000 shares of 5L each, with a deposit of 1L 10s. per share.

TRENTON DELABOLE SLATE QUARRY.—The active impulse given of late to operations in mines and quarries, has led to the formation of several companies, amongst which the prospectus of one under the above title is now before us. The capital proposed to be raised is 12,000L, divided into 1200 shares. The workings were commenced in 1842, and a sum of 6000L outlaid in erecting machinery and buildings, and the construction of leats, &c.; the quantity of slate and slabs sold during the past 12 months was about 500 tons. The sett is described as extending over several hundred acres of land, and held for a term of 85 years to run, renewable on payment of a fine of 200L, the annual rent is 120L, which includes about 16 acres of surface, it being provided that the maximum rent, including royalties, assuming the quarry worked to its fullest extent, shall not exceed 800L per annum. The quality of the Delabole slate is well known, and the increasing demand affords every prospect of success, by the economical and judicious working of the quarry.

WHEAL ZION.—This mine, which is situated in the parish of Calstock, and in the vicinity of several productive mines, was formerly worked under the title of Wheal Morshead; but a sett having been obtained from the Duchy at 1-15th dues, it has been determined to resume its active working. To effect this, the mine has been divided into 256 shares, at 2L 10s. per share—the first deposit being 1L per share. The sett is 800 fms. in extent east and west, and 600 fms. north and south, and an adit driven 288 fms. to hill, with "backs" of nearly 50 fms. Ten copper and silver-lead lodes have been discovered; and samples of the latter have yielded from 50 to 200 ounces to the ton of lead. It is proposed to extend the adit, so as to prove some of the lodes, which it will do at a depth of 40 to 50 fathoms—the principal lodes of the Tamar Consols and Beeralston Mines running through the sett.

CAMBORNE CONSOLS AND WHEAL TRYPHENA.—A correspondent informs us, that a valuable discovery of copper ore has recently been made in Camborne Consols Mines, on one of the Dolcoath lodes, which proved very productive to the adventurers in that mine; great expectations are, therefore, entertained respecting it. Several tons of rich ore are now being sent to the surface, which attract much attention. A very rich course of tin has also been discovered in Wheal Tryphena during the present week, from which it is calculated considerable profits will be realised, so that the prospects of these mines, and others in the neighbourhood, are more than usually cheering.—West Briton.

It is reported in accounts from Charleroi (France), that two layers of coal of rich quality had been discovered, and the produce was expected to prove most abundant.

MINING IN ENGLAND AND BRAZIL.

Sir,—I have lately read, with much interest, several articles in the *Mining*, and other Journals, on the subject of slavery, showing that great encouragement is given to slave dealers by English companies engaged in mining operations in Brazil. One of their statements refers, for proof of its accuracy, to the report of one of their companies, drawing therefrom deductions which appear to me unanswerable; but there is one point of view in which the subject has not been considered—viz.: is it better to invest English capital in foreign or in English mines? I presume it will not be denied that there is an immense field in our own country for mining in copper tin, lead, &c., but there is a charm about the word gold too dazzling to admit of calculating the expense of getting it; 3L 17s. 9d. per oz. is seldom put in juxtaposition with the cost of the ounce. Shareholders refer to the returns from their mines given in weight; they do not understand, as conclusive evidence, that the mines must be flourishing. I will not here show, that of all mining that for gold is, and always has been, the least remunerative, and that no countries are so poor as those in which this metal is the staple of mining industry. I wish to draw a comparison between gold and copper—between Brazil and England—between supporting hundreds of English families at home, and units of English abroad, plus the most direct encouragement of the African slave trade. To do this I take the Devon Great Consols on the one side, and the St. John del Rey Mining Company on the other—the first being the most successful Cornish company of the day—the latter the only Anglo-Brazilian company paying anything but hopes. The Devon Great Consols have just declared a two-monthly dividend of 7L 10s. per share, or 45L per annum; the St. John del Rey's last half-yearly dividend was 17s. 6d. per share, or 85s. per annum. The price of Devon Great Consols is 210L per share, which, at 45L per annum, makes it little more than a 4 1/2 years purchase; whilst the St. John del Rey, at 13L, sell for within a fraction of 7 1/2 years. There must be some reason for this strange difference in the value of these two investments which I cannot discover. If it be said that by the last advances of the St. John del Rey Company they have increased returns, it is equally true that the low price of copper induced the directors of the Devon Great Consols to keep back supplies of ore, and direct their attention to opening new ground for the future. The late rise in the price of copper enables them to increase their yield and swell their dividends. The Cornish Company works with free men, of whom they can, when wanted, get any number they require; the Anglo-Brazilian Company employs slaves, whom they are forbidden to purchase, and whom it is impossible to hire without risk of receiving slaves of bad constitution and character, and for six years certain, the hire payable whether the slaves live, die, or become incapable of work during the lease.

As regards motive power, the Devon Great Consols have an immense supply of water, and if that were not sufficient, steam can be had recourse to. The Brazilian Mine, getting rather deep, has all its water-power in use, and has no fuel for steam engines. If the Cornish company's lodes ceased to be profitable, the hands would be discharged forthwith, and the machinery sold. If the like misfortune fell upon the Brazilian adventurers, the machinery would not sell for 5s., there being no buyers, and the company would be liable for the slaves hired for terms of years, and for the expenses of all the Europeans home. How do the two companies stand as to the shareholders' power to become acquainted with the true state of their affairs?

In Cornwall, if any improper choice be made of manager, or mine agent, the *Mining Journal* would soon be made acquainted with the fact. If a mine in that county be worked unfairly, or be in a different position from that represented by the officials, one week at the utmost suffices for the exposure of the falsehood. On the other hand, the Brazilian shareholder has no means of ascertaining the truth. There may be abroad a Waddington, to allow the accounts to be cooked, a Hudson to cook them, and at home a board of some half dozen, yeaving and naying, as bidden by their leader in the chair, to pass them, and the shareholder is left with his eyes shut to swallow them.

Let us, I say, keep our capital at home to support our own poor—do not send it abroad to foster the slave trade, and fatten the vampires in Rio, who traffic on their fellow men. Let us place our money in mines where we know our interests are entrusted to manhood of mind and body—where honesty, candour, and upright dealing reign, and fraud, intrigue, and dishonesty are unknown—where we can learn, if we like, the true condition of our investment, and where, if all success result, it will be gradual, and leave some payments behind—not like an avalanche, leaving nothing but liabilities, as may at any moment happen to a company whose base is slavery. If what I have said tend to convince one of your readers that there is ample field for mining speculation in England, it would be more philanthropic to employ their own countrymen at home than to encourage the shipment of Africans on the coast. I shall not write in vain.

London, May 17.

TRANSFER OF SHARES IN MINES—ARE STAMPS REQUISITE?
Sir,—A letter from your intelligent correspondent, "J. Y. W.," which appeared in your columns of last week under this head, induces me to address you, although I do not profess to be learned in the law, but simply possessing some common-sense knowledge and a slight practical experience on the subject in question. I have not seen the circular referred to by your correspondent, which would appear to affect the transfer of property in railways and other joint-stock companies, from which it seems that an alarm has been created in the minds of the uninitiated, and those exercising extreme caution, that mines are included in the category of joint-stock companies.

I must say for one, I am in no way nervous, nor am I troubled in the matter. I have not consulted my lawyer, nor have I applied to the Commissioners of the Woods and Forests, who, I believe, are interested on the part of the Government in mines. The custom known as the Cost-book System, has been observed and recognised, as your correspondent very properly observes, for centuries—the transfer of shares being registered by the pursuer in the cost-book of the mine, which is held to be sufficient, and which is not attended with any stamp. The remarks of "J. Y. W." are quite to the purpose, as to the exemption in the Joint-Stock Companies' Act of companies, or adventures, formed for working mines under the Cost-book Principle; but I must say, I should be glad if he would endeavour to illuminate those who are in the dark by lucidly explaining, or elucidating, what the cost-book system really is.

I have my notions, and which have been confirmed by the remarks which have appeared from time to time in your columns, and more particularly from a paper which I have perused in the *Mining Almanack*, p. 287, which, I consider, bears on the point. As to the objection of any pursuer to register a transfer without a stamp being attached thereto, I consider he is responsible for any consequences which may arise from his neglect or ignorance. I think, however, there should be a greater check on business transactions than the mere words "a valuable consideration," which opens the door to fraud and deception, which, I am sorry to say, so far as my experience goes, I find to have been too oft practised.—H. E.: Temple, May 18.

SPEARNE CONSOLS MINE.

Sir,—In your paper of last week, I observe a letter from Captain John Cartwright, reflecting rather severely on my conduct as pursuer of the Spearne Consols; I should have let it pass *sub silentio*, had you not specially called on me for some explanation. He says, that the balance of 355L 13s. 10d. would, if the "usual mode" had been resorted to, have amounted to upwards of 485L. His "usual mode," for aught I know; but I should be sorry to adopt it myself. He says, "all the candles are charged up to the end of April, and coals for consumption to the end of June"—that "as an old miner this mode is new and novel, and that the dividend of 1L per share is a mere farce, and most unjust"—that, in fact, "the adventurers should have received 3L per share, and still have left upwards of 50L in hand to the credit of the mine." Now, Sir, for my explanation of the facts of the case. This mine was first taken in hand by me in October, 1839, and from that hour to this not only have I never had a single shilling of the adventurers' money in my hands, but I have been sometimes 1200L, often 500L, and at this moment am actually upwards of 450L in cash advances to the concern, without ever having charged a single shilling for interest or commission, contenting myself with a salary of four guineas per month, to include all horse hire, gig hire, &c. Our last account was on the 30th of April, for the months of January and February, and not one penny of any description is charged for supplies since the 14th of February, which is the date of the latest delivery, except 24L for 48 tons of coal, which I paid cash for in April, and which may last on till some part of June; but by buying it from on shipboard for cash, the adventurers have the advantage of increased cheapness; whilst half a ton of gunpowder, delivered on the 27th of Feb., but not begun to be consumed in that month, was postponed for charge until the two months ending in April, for which we shall, of course, have our account in June.

Perhaps you will ask "why make a dividend when the adventurers were in debt to the pursuer?" Many of my co-adventurers have repeatedly begged me to postpone all dividends until I should have cash in hand to pay them with. Whenever I could declare a dividend by crediting the Cost Book with tin sold, I did so, paying the adventurers the dividend declared in cash, although for the tin so sold, I should have to wait the usual 30 days before the amount would appear as cash to my credit at my bankers, losing, of course, the interest out of my own pocket. As I have said, at this moment I am in advance a cash balance of upwards of 450L; but, if the tin bills had been sent in at maturity, I am still in advance more than 50L! What, then, has Captain Cartwright to "complain of?" although you are pleased to say that you think "with much justice" he has "something to complain of." In April, 1848, Captain Cartwright gave me a written notice of having transferred all his interest in the Spearne Consols absolutely to another party, to whom alone I have been paying the dividends since that time!

With Captain Cartwright's report of the underground operations I have no reason to find fault, and agree with him that, under "proper management," as he expresses himself, the mine will continue to do well. I paid for the purchase of the setts, and the materials then thereon, 825L 13s. in October, 1839; between which time and March, 1844, I called on the adventurers for 1290L in all, to pay off this first-named sum, and for another steam-engine, &c., &c. Since November, 1845, I have made dividends to them of 2688L; and, being myself

the largest original adventurer in the concern, I have no reason to be displeased with our prospects. As all the *bona fide* adventurers in the Spearne Consols Mine have expressed themselves throughout perfectly satisfied, I do not see why Captain Cartwright should seek to drag me before the public to repel such groundless complaints.—RICHARD PEARCE: Penzance, May 16.

[It is only due to Mr. Pearce to make the amende honorable, so far as we are ourselves concerned. The letter of Capt. Cartwright, inserted in our last week's *Journal*, was delivered personally by that gentleman, who gave us to understand that he held a large interest in the mine in question, and with the representations made by him, and conveyed in his letter, we most certainly do think there was a "something to complain of." We gave the pursuer credit for having erred upon the safe side—if or he did—and which we had a right to assume from the statements put before us. We most readily give insertion to Mr. Pearce's letter, and regret if that any observation we may have made in the absence of the explanation afforded, should have prejudiced that gentleman. The value and importance of the *Mining Journal*, in thus affording opportunity for charges being made, and replies or explanations given, cannot, we think, be better exemplified than in the present instance.]

THE BRITISH COPPER SMELTING COMPANY.

Sir,—I left England in August last, so fully impressed how desirable would be the establishment of the British Copper Smelting Association (*Mining Journal*, Aug. 12, 1848), that I have promoted amongst my Chilean friends a decided inclination to join in the undertaking. On my return, I have made many inquiries on the subject without succeeding in finding any traces of it. If you can give your Chilean readers any information relative to it, I know it will be much appreciated; and I shall also feel greatly obliged by your acquainting me where I can apply for particulars.—ANGLO-CHILIAN: London, May 17.

[The information can be obtained at the offices, 2, Moorgate-street.]

CONTRACTS FOR COAL.—The Board of Ordnance has given notice that on or before Wednesday, the 6th of June, they will be ready to contract with parties for supplying the barracks and ordnance stations in Great Britain and the Channel Islands with coals, from 1st July next to 30th June, 1850, in such quantities as may from time to time be required. Tenders to be made for the several barracks and stations joined together in the particulars of contract.

THE LONDON, LIVERPOOL, AND DUBLIN COAL CONSUMERS' COMPANY.—We have just received a prospectus of a new coal company under the above title, possessing in the details of its business a peculiar and novel feature, which may, perhaps, be carried out in this branch of merchandise—viz.: supplying shareholders with the best coals at cost price direct from the mines, without any intermediate agency of merchant or dealer, and securing a certain and prompt supply of a good article at every period of the year at a fixed and undeviating price, in any quantity. The coals supplied will be of mines purchased near Holywell, in Flintshire, and are stated to be of excellent quality. The shares are to be 2L each, for which every shareholder is to have one ton of coals per annum at cost price, and his share of the profits to the general public, who are not shareholders. It is assumed that 25,000 tons at cost price will be required; the savings in price alone to the shareholders is estimated at 6000L, besides the general profit, as above stated. The prices are to be, in London, 14s. per ton; Dublin, 10s.; Liverpool, 7s.; at the pit's mouth, 4s. 6d.

INSTITUTION OF GAS ENGINEERS.—We understand that an Institution of Gas Engineers is about to be established, for the purpose of collecting and promulgating all data connected with gas manufacture, distribution, &c., producing it in the highest perfection, and conveying it to the greatest distance at the lowest possible charges. Another great object is the proper training of gas engineers, and the reduction to one regular system of all the present varieties of process, costs, and charges. It is stated that there are at present 15,000,000L invested in gas works in this kingdom; while the prices charged in every town are totally at variance with each other. The projectors of this institution are Mr. Croll, the meter manufacturer, and Professor Wilson, and we have no doubt they will be warmly responded to.

GELLY GARR COLLIERY.—We stated in our last that a ventilator, on an entirely new principle, had been erected at this colliery, the invention of Mr. Brunton, and that some experiments had been made, which were highly satisfactory. It consists of a very simple mechanical arrangement, without valves or separate moving parts, and all the friction is on the pivot moving in a socket containing oil. It is applied to the top of the upcast pit by a short tunnel, or air-course, and is driven by a steam-engine. In its rotatory motion it subjects the air to a high degree of centrifugal force, whereby any degree of rarefaction necessary to the complete ventilation of a colliery may be attained, with the greatest economy of power. In a part of the airway where the area was only 9 1/2 superficial feet, the air was propelled with a velocity of 32 feet per second, and in its way to the upcast pit, through an opening of 4 feet area, it obtained a velocity of 76 feet per second. On the following day a very important experiment was made by stopping the influx of air from the downcast shaft, and in less than five minutes the whole of the colliery was thus artificially subjected to a rarefaction equal to, and in its effect upon the gas in the coal corresponding with, a sudden fall of the barometrical column, of about two-tenths of an inch of mercury, and this may be greatly increased.

THE IRON TRADE.—The expectations indulged in at the last quarterly meetings, that the market would have been enabled to maintain the late advance of 30s. per ton, have not been realised; and we regret to learn that the slackness of orders, consequent on the unsettled state of the continent, and the low rate at which iron is offered in the Scotch and Welsh markets, have operated to depress still further the South Staffordshire trade. Several furnaces throughout the district have already been blown out, in consequence of the falling off in demand; and we believe that a general drop in wages, to the extent of the recent advance, will immediately take place, and has, in fact, already been partially acted upon, in pursuance of the understood arrangement between masters and men for regulating the trade. Although the present state of things is far from being cheering, we cannot yet see any reason for despondency as to the future. The stocks in the hands of merchants and manufacturers are exceedingly light, and a reaction in the market would have an immediate and beneficial influence on every branch of the trade. To preserve our position, however, it is most essential that a cordial understanding should exist, in emergencies like the present, between those whose interests are so closely connected. Manufacturers and workmen must make up their minds for reduced profits and wages in seasons of adversity; and so long as a feeling of mutual confidence exists between them, they will be better prepared to take advantage of a return of prosperity whenever it sets in. A few weeks may alter very materially the prospects of the foreign trade, and, as there is every probability that the dispute between Denmark and Germany will be settled by the intervention of England, one of our best continental markets will be again thrown open to the trade of this district. Our New York correspondent quotes English bars at 84 1/2 to 85s., and Garthside pig at 82 1/2 cash, these quotations being considerably higher than those given in our Glasgow report; and, as our correspondent's letter is dated the 2d instant, it is satisfactory to find that the tone of the market is improving.—*Birmingham Journal* of this morning.

Carn Brea.—J. Wedlock was killed by a fall of stone.

Trecoll Mine, Laxall.—S. Williams, a miner, was standing at the boiler furnace door changing his clothes, when the boiler suddenly exploded, and he was so dreadfully scalded, that he died the same evening; another man was much hurt.

Frightful Explosion.—On Monday morning, a dreadful explosion of fire-damp occurred in a pit belonging to James Foster, Esq., at Shut-end, Brimley-hill, by which two men were instantaneously killed, and 10 or 12 others fearfully injured.—*Ten Towns Messenger*.

Aberdare.—On Thursday last an awful explosion took place at the Werfa Colliery. Twelve colliers were dreadfully burnt, since which three have died, and two are not expected to survive; a horse was also killed. It occurred by a man with a Davy lamp going to a foul heading, and who was followed, unfortunately, by a boy with a naked candle, which exploded the gas.

West Bromwich.—J. Hodggets was killed in one of Mr. Davies's pits by a fall of coal.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Ships at Hartley, 171; sold, 58.
WEDNESDAY.—Carr's Hartley 13 6—East Adair's Ma'n 12—Hastings' Hartley 13—Ravensworth's West Hartley 12 6—Tansfield Moor 13—Wall's End Brown's 13—Gosforth 13 6—Riddell's 13 3—Eden Main 15—Bradley's Hutton 16—Hutton 16 6—Lambton 16—Morrison 13 6—Russell's Hutton 16—Stewart's 17—Kellie 15 6—Whitworth 12 6—Tees 16 6—Langmech 23 6—Whitworth Coke 21—Ships at market, 128; sold, 48.
FRIDAY.—Adair's Main 12—Hastings' Hartley 13 6—Holywell Main 13 6—Ord's Redheugh 12—Tansfield Moor 13—Towson's 13—Wall's End Bewick and Co. 13 6—Gosforth 13 6—Gibson 13 6—Hodley 13 6—Percy Bensham 13—Riddell's 13 3—Eden Main 15—Bradley's Hutton 16—Bell 14 6—Hutton 16 6—Lambton 16—Morrison 13 6—Pemberton 13 6—Kellie 15 9—South Hartlepool 15—South Durham 13 9—Derwentwater Hartley 13 6—Elgin 13 6—Grangemouth 12 6—Whitworth Coke 21—Ships, 89; sold, 50.

NEW PATENTS.

C. Smith, wife of J. Smith, Bedford, improvements in certain articles of wearing apparel.
S. Alport, Birmingham, gun-maker, for a certain improved method of making or manufacturing a certain part, or parts of tools used in weaving.
W. P. Parker, gent., Lime-street, London, for improvements in the construction of pianofortes. (Being a communication.)
J. Thom, Ardwick, near Manchester, calico printer, for improvements in cleansing, scouring, or bleaching silk, woolen, cotton, and other woven fabrics and yarns, and in ageing fabrics and yarns when printed.
M. Poole, gent., London, for improvements in apparatus for drawing fluids from the human or animal body. (Being a communication.)
L. A. De Chateaufort, gent., of Rue St. Lazare, France, for improvements in fire-arms, cartridges, bullets, bayonets, and ordnance. (Being a communication.)
H. Bossemer, Baxter-house, Old St. Pancras road, and J. S. C. Heywood, Islington, Middlesex, for improvements in expressing and treating oils, and the manufacture of varnishes, pigments, and paints.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

S. A. Kitch, Maddox-street, auto-cumulative gown.
R. Waygood, Newington-caneway, corn and flour grinding and dressing mill.
J. D. Weymouth, Naltes, near Bristol, terrestrial globe.
D. Harcourt, Bristol-street Birmingham, egg blender.
J. Bourne, Savage-gardens, London, steamer.
W. Bishop, Boston, Lincolnshire, metallic box-end protector.
H. Knight, Birmingham, engineer, steam-engine indicator.
J. James, John-street, Oxford-street, railway travelling trunk.
T. Buckland, Islington, a cigarilla.
J. Roberts, Eastcheap, London, grape tile.—*Mechanic's Magazine*.

NOTICES TO CORRESPONDENTS.

*A. We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

*D. G. R. (Tipson).—We have not yet published a description of the patent variable expansion apparatus of Messrs. Petrie and Co., of Rochdale. The advertised testimonials appeared in our Journal of the 30th December last.

*L.—We do not know the address of Dominique Albert, L.L.D.

Mr. Evan Hopkins, C.E.—Having received several communications in reference to papers this gentleman has recently written in our Journal, and which require his attention previous to publication, we have to state, that Mr. Hopkins is at present inspecting some mining property in Prussia, and may possibly be so engaged for some weeks to come; on his return to London, however, all arrears will be speedily cleared off, and new articles prepared. This notice will also explain any apparent inattention to private communications.

*A Constant Reader.—We have received a copy of a letter which appeared in the *Morning Post*, on the subject of the slave population of the St. John del Rey Mining Company; and although we have as great an aversion to the atrocities which have been perpetrated in the prosecution of the slave trade as our correspondent, we believe his views of the subject are not founded on correct data. With respect to the medical and general care of the negroes in the employ of the Anglo-Brazilian Mining Companies, we refer him to a summary of the annual report of the superintendent of the St. John del Rey Mining Company, in another column.

The Gun-Cotton Engine.—Our correspondence on this certainly interesting subject is becoming so voluminous, that we must, however we might wish to elicit facts—bring it to a close, more particularly as it is, in some instances, becoming unnecessarily personal. We have received a communication this week from Mr. Carr, in which, after going through statements before repeated, he comes to the conclusion that Mr. Hansen has not advanced an argument or item to disturb one sentence in his first paper on the subject, as he estimated the power according to the volume and temperature of the gas evolved; and Mr. Carr did the same, but substituting the true law for the one Mr. Hansen had assumed. In defence of all principles, theoretic or practical. We have also received another communication from Count de Werdinsky, which, from the causes above stated, and as certainly presenting nothing whatever new, we must beg to decline.

*H. C. (Oviedo).—Super-sulphuret of lead is earthy, of a greyish blue colour, and so inflammable as to take fire, and burn on being held in the flame of a candle. It occurs in the Dufrenoy Lead Mines.

*L. G. (Witham).—Platina unites easily with bismuth. With antimony its fusion is facilitated; but its weight and ductility are lessened. By zinc it is rendered more fusible—the alloy being very hard. It unites easily with tin—the alloy being very brittle. It unites very well with lead. One ounce of platina being cupelled with 20 ounces of lead, the platina gains the power of being forged and soldered completely. It will not unite with forged iron, but, melted with crude iron, the alloy is so hard that the file will not touch it. It is ductile in the cold, but breaks short when hot. With copper the alloy is ductile. When the copper is in the proportion of three or four to one, it takes a fine polish, and does not tarnish for years. With silver the alloy is hard, without ductility, and tarnishes; but with gold it can only be alloyed by the most violent heat—the colour of the gold being greatly altered, and the alloy possessing considerable ductility.

*A Speculator (Bath).—The offices of the Sligo and Shannon Railway are at Winchester House, Old Broad-street.

*An Enquirer (Sunderland).—The first inventor of the chronometer was John Harrison, the son of a poor carpenter in Yorkshire. For this invention, in the year 1759, he received a premium of 20,000*l.* from the Government. He had been studying how he could alter a clock, so as not to be subject to any irregularities from the motion of the ship or the difference of climate, from the end of the reign of Queen Anne until he brought it to perfection, having occupied 45 years in its unremitting study.

*J. S. (Leeds).—The Holne Park Tin and Copper Mine Company has just been formed. We do not know what ore has been raised; the shares are, we believe, all taken—probably we shall be able to give some further information next week.

*Chemists (Wolverhampton).—Gold is employed for the purpose of gilding the surfaces of copper, brass, and silver, in the following different processes:—1. Hot gilding for the ornamental metal to be gilt is first washed with a solution of nitrate of mercury, or amalgamating water; this gives a mercurial surface, to which an amalgam of gold and mercury is applied, from which the mercury is driven off by heat. The colour is then heightened, by burning on it a cover of gilder's wax, formed of verdigris, wax, and blue vitriol; it is then polished, and heightened by a boiling solution of common salt and cream of tartar. 2. Cold gilding of silver, which is performed by a solution of gold in nitric acid, to which sal ammoniac (a triple salt formed by sal ammonia and corrosive sublimate) has been added. This solution of gold, evaporated to the consistence of oil, is applied to the silver, which it blackens, but which appears gilded after being heated. Cold gilding is performed by rubbing the metal with the ashes of a linen rag, which has been impregnated with a solution of gold. Wet gilding by merely dipping the work into a solution of gold.

*J. J. (Newcastle).—The prices quoted for rail-roads, hoops, and sheets, are for London; if sold at the works, or at any shipping port, the difference of freight from the several places is to be deducted. The ironmasters, making their profit on the material, simply add the freight and charges to London.

*A Miner (Crawford).—Red silver is a very beautiful mineral; it is confined to a small number of localities, though in some of them it is of pretty frequent occurrence. The light red varieties are met with principally in the Saxon and Bohemian districts of the Erzgebirge, particularly at Marienberg, Annaberg, and Johangeorgstadt, in Saxony, and Joachimsthal, in Bohemia. It is usually associated with other ores of silver, galena, blende, pyrites, and arsenic; the dark red varieties occur chiefly with calcareous spar, native arsenic, and galena, at Andreasberg (in the Harz), Freiberg (in Saxony), Schenitz and Nagybanja (in Hungary), Guadalupe (in Spain), Kongsberg (in Norway), and St. Maurice mines (in France). It was formerly found at Huel Duchy, in Cornwall, and in the south of France. German gilders of silver have been observed to use Red silver, from its colour, may sometimes be mistaken for real gold; but the yellow streak of the latter is well defined, and its specific gravity lower. Cinnabar volatilizes before the blow-pipe; while red silver forms a metallic globule. As an ore, it has been observed that the dark yield a larger proportion of silver than the light—that from Joachimsthal contained sulphuret of silver, 74.35; sulphuret of arsenic, 25.00.

John Slater (Newport).—An account of welding iron and steel together was published in our Journal of the 8th July, 1848. Cast-steel in a white heat, and iron in a welding heat, will unite completely.

*Brush (Snow-hill).—In 2 lbs. of saturated solution of zinc, put 1 ounce of nitric acid; then, by the addition of potash, the excess of acid is saturated, and a white substance, soon becoming yellow, is precipitated; when white parts are discoverable in this yellow precipitate, it may be concluded no iron remains in the solution. If the zinc contains manganese, carbonate of potash is to be added, but short of the total precipitation of zinc; leaving the fluid on the solution two or three days, that if any manganese have been precipitated, it may be re-dissolved by the acid, the zinc precipitating in its place—the sulphate of zinc thus purified will furnish the white oxide of zinc, so desirable by painters.

*C. F. (Birmingham).—Gold can be dissolved completely by the sulphurets of alkalies merely by fusing equal parts of sulphur and potash with one-eighth of the total weight of gold in leaves; it may then be mixed, pulverised, and dissolved in hot-water, being an hydrosulphuret of potash. Stahl affirms, that by this process Moses dissolved the golden calf.

*T. M. B. (Swansea).—The smelting-works of Messrs. Schneider, in South Australia, have commenced operations—they are working under Napier's patent. Several of the people who started from Swansea, we hear, have given some causes of dissatisfaction to the superintendent.

*A Dwellor in Brittany.—A composition in powder, denominated German yeast, can be purchased in packets in London; this has been found a good substitute for yeast. Carbon to be of magnesia has the effect of raising dough, but this must be used very sparingly—20 or 30 grains to about 4 lbs. of flour; the bread made with this must be baked in a quick heat, and not kept more than three or four days, as, when very stale, it has an unpleasant taste.

Isaac Whitehouse (Rutland).—Daniel's battery can be purchased of various sizes and different prices. One of the best works lately published on electricity is Gmelin's *Hand-book of Chemistry*, translated by Henry Watts, and issued by the Cavendish Society—it can be procured at any respectable bookseller; the other queries shall be answered in our next.

*A Constant Reader (Richmond).—The most common substance used for pointing is lamp-black with mortar; there is no certain proportions to be used, as different bricklayers vary in their mixtures—generally adding so much black as will give a good colour to the mortar, depending more upon judgment than any rule.

*An Enquirer (Old Broad-street).—Carbon, or pure charcoal, in its ordinary form; this substance is best represented by the charcoal prepared by exposing wood to a red heat in close vessels. The diamond is a much purer variety. Charcoal is highly combustible, and has extensive powers of combination; when burnt in oxygen gas, it does not, under circumstances favourable to such a result, alter the volume of the gas, but gives precisely an equal bulk of carbonic acid gas. This acid gas, if pure, has the specific gravity of 1.5; hence 100 cubic inches weigh 47.25 grains. A specific weight which, in some subterranean places, occasions it to occupy a situation nearest the ground. It is non-respirable, and is incapable of supporting combustion. Carbon is most extensively diffused through the mineral kingdom, especially in the compounds of carbonic acid with various bodies, and in the several varieties of coal.

*A Speculator (Guldford).—We understand the shares in the Worthing Mining Company are all allotted, and that a body of miners is about to proceed, in a few days, from Plymouth, in order to work the company's mines, which have been partially opened by the promoters of the company.

*H. (Westminster).—If the letter signed "C." in our Journal of the 14th April, on the Modum Cobalt Works, contained any misstatements, our columns are open for their refutation. We are eager, on all occasions, to elicit information on any subject that may be of general interest to our readers, and willingly insert communications on either side of a question, so long as they are conducted in a proper tone and gentlemanly bearing, but we must decline allowing our Journal to become a vehicle for abusive personalities.

*G. F. B. (Bath).—The eminent French chemist, Lavoisier, was guillotined by order of Robespierre, A.D. 1794.

II. Crostle (Queen-street).—The Egyptians, among the nations of antiquity, appear to have possessed the greatest amount of chemical knowledge. They prepared sal ammoniac, common salt, vitriol, glass, enamel, tiles, painted earthenware, several metal and metallic alloys, soap, vinegar, beer, various medicines and pigments, and knew how to fix colours on silk by means of mordants. Whether the Chinese, who have long been acquainted with the preparation of sulphur, nitre, gunpowder, borax, alum, porcelain, verdigris, paper, together with dyeing, and the formation of various metallic alloys, are partly indebted to the Egyptians for their knowledge, is a question which must remain undecided.

*Electricity (Liverpool).—Grove's gas battery consists of a series of tubes, containing slices of platina foil, covered with a pulverulent deposit of the same metal. The tubes are arranged in pairs, in separate vessels of dilute sulphuric acid; and of each pair one tube is charged with oxygen, and the other with hydrogen gas, in quantities such as to allow the platina to project above the dilute acid into the atmosphere of gas in the upper part of the tube. The platina in the oxygen of one pair is metallically connected with the platina in the hydrogen of the next—thus a series may be composed of any number of pairs. A battery of four cells, constructed in this manner, will decompose acidulated water; a single cell will decompose iodide of potassium; and 50 pairs will produce very powerful effects—such as giving a shock which may be felt by several persons at once—producing a brilliant light between charcoal points, &c. When the poles are unconnected, a gold leaf electroscope, connected with either of them, is sensibly deflected. When distilled water is substituted for acidulated water in the cells of the battery, the effects are similar, but more feeble.

*It is particularly requested that all communications may be addressed—

To the Editors,
Mining Journal Office,
36, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, MAY 19, 1849.

We have the authority of the Queen's Government, given publicly in the House of Commons, for stating that the hostilities now in progress in several parts of Europe have weighed somewhat injuriously on the commerce and the revenue of the country for some weeks past. And what is thus officially stated, is confirmed by those who are engaged in the great mercantile transactions of the day. The statement, however, refers to the foreign trade of the kingdom exclusively. It is not pretended that the activity of the internal trading and manufacturing circles of the kingdom has suffered either abatement or interruption. In mining business, particularly, things have at least kept their place, the tendency of prices being manifestly upwards, and the value of mining shares following, by a well ascertained law, in the same direction. But whatever should permanently disturb the amicable relations of the Christian states of Europe, would disturb its commerce and its markets; and, therefore, the hope of England is that peace will, upon the whole, be preserved among her commercial neighbours. We are happy to know that in Wales, in the midland parts, and the west of England, mining affairs are in a rallying and a hopeful condition. In the majority of cases, the adventurers are receiving satisfactory dividends, and both employment and wages are such as to give general contentment to the working classes. We could, it is true, wish to see a more highly improved state of things. We are for good profits to the masters and good wages to the men—good, that is, in the sense of enabling both to make a money reservation against those times which will happen in the history of every widely-trading community, when both species of remuneration will have run down to zero, or, possibly, when both may have become a negative quantity. But let us, at least, take thankfully the sunshine now passing over us, and trust that when the shadows of a less prosperous season shall overtake us, that we shall still have some light.

The question mooted by a correspondent last week, on the necessity, or otherwise, of stamps being attached to transfers of shares in mines, is one to which too much importance cannot be attached in one sense; while we agree with him, on the other hand, there is no cause for alarm, and that it is a mere "bugbear." The 63d section of the Act for the Registration, Incorporation, and Regulation of Joint Stock Companies, 7 and 8 Vic., c. 110, exempts all partnerships, or companies formed for the working of mines, minerals, and quarries, of what nature soever on the principle commonly called the Cost-book System, as well as Irish anonymous partnerships, from the operation or clauses of the Act,* and we need hardly say, that mines worked in the counties of Cornwall and Devon have ever been conducted in such manner, the transfer being transmitted to the pursuer, to be entered in the cost-book, which is the only evidence required in the Stannaries Court, or the shares signed off in the cost-book itself, by the party disposing of his interest, and in like manner accepted by the new adventurer. It is, therefore, absurd to suppose that the circular referred to can, in any way, affect the *modus operandi* in which our mines have been conducted for upwards of a century.

Usage becomes law; and, as there has never been an attempt to interfere with, or infringe, the custom to which we have referred, we fancy the Commissioners of Stamps, or even the CHANCELLOR of the EXCHEQUER, would find it not one of the easiest tasks to alter, or abrogate, a system which has worked so well for the national welfare, and which at this time is affording employment to countless thousands. It is quite sufficient that we have an income tax upon the dividend-paying mines—not to advert to the free imports of foreign ores of slave produce, without a stamp tax being imposed; but we feel assured no Minister would be so wild and wanton as to attempt an extortion, which, in the end, would fail in its object, and do to the mining community—we refer more especially to the working miner—an injury more readily conceived than its direful effects can be well imagined.

We have only to observe, in noticing the letter of our correspondent, that he may feel assured there is no cause for apprehension; and one little matter we think will alone convince him that the prince and the peasant—the heir to the Crown and the common working miner—row in the same boat. The Duke of Cornwall is interested to the tune of some tens of thousands per annum, arising from leases of mines granted by the Duchy. Let there be obstacles thrown in the way of the prosecution of the working of mines, his Royal Highness's income will diminish, mines will be abandoned, miners thrown out of employ, poor rates increased, and "Unions"—not of happiness, but misery—enlarged beyond the ordinary powers of conception.

Although before all other things we dedicate our time, our attention, and the whole circle of our opportunities to the elucidation and enlargement of mining affairs at home and abroad, we are not, in consequence, excluded from—we do not incur so much as a momentary foreclosure of—our interests in the attainment by the British people of greater success in their general commerce, of a more remunerative prosecution of the arts, and in an increased fulness of the national cup with all material benefits. We are sure that advantages of such a class and compass as these are not to be won by a selfish policy, or to be secured by an indifferent and a hesitating exertion. Our minds must be raised to the consideration, not of what is best for England, separated from the world, as though she would live in a haughty and cloistered seclusion from it, but rather what it is her true policy and her best interest to do in the presence of that great family of nations, who are traversing every continent, and piercing every sea with the riches peculiar to the lands from which they are conveying them; and what it shall appear best to do in these circumstances, it is best to do vigorously and at once. In commerce the nations of the world are running a race, and most certainly the prize will be theirs who most thoroughly rid themselves of all impediments, and give themselves most unreservedly to the contest. The great statute which the last few days have all but seen the completion of will place the navigation of the United Kingdom on a new and an intelligible basis, and free the greatest maritime nation of this or any preceding age from those restrictions and limitations, which have hitherto practically excluded its vessels and its flag from half the ports of the world.

We are full of hope as to the results, notwithstanding our fears that the change is essentially a very great venture. We have seen nowhere as yet an answer to the argument founded on this fact—that all along the least protected parts of our navigation have been the most prosperous—that, in fact, in those branches of our sea-going efforts, where the restrictions of our maritime law did not reach us, our tonnage and our shipping increased in a proportion far greater than in those cases in which we went to sea armed with the equivocal advantages of our prohibitory laws. To us in these islands, and to the colonies in particular, we hope somewhat confidently that the change now nearly consummated, will result in the cheapening of freights, and, consequently, in the free exchange of

* Vide *Mining Almanac*, pp. 348, & seq.

merchandise throughout the world; and in that case we shall hear of the benefits which this measure will have distilled upon the distant mining depths of the Australias, as well as upon the corn fields and the pine forests of Canadian woodmen and agriculturalists.

The question of the great economy to be derived by railway companies from having the entire traffic on their lines executed under contract, instead of through their own officials, has within the past fortnight shown itself of far greater importance than even we attached to it in the few observations we made in one or two late Numbers. We then mentioned that the Irish Midland line was to be worked under contract at 1*s.* 3*d.* per mile, and we now find the contractor is Mr. Dawson, the eminent coach and carriage builder in Dublin. In Ireland, in addition to this, at present worked by contract, are the following:—The Irish South-Eastern, 10½ miles, by the Great Southern and Western Company; Dublin and Belfast Junction, from Drogheda to Dundalk, 22 miles, by Mr. DARGAN, who constructed the majority of the Irish lines; Dundalk and Enniskillen, from Dundalk to Castleblaney, 20 miles, by Mr. DARGAN; and the Midland Great Western, from Dublin to Mullingar, 50 miles, by Mr. DAWSON. In England, we are happy to find, companies seem disposed to throw off this incubus, and thus avoid the enormous complexity attached to the system, and effect a vast saving in annual cost. The Eastern Counties—that most abused and deluded, of all abused and deluded companies—is now, it appears, about to enter into a contract with one of the most practical, intelligent, and highly substantial contractors in the kingdom, to work the line entirely on his own account; and, by the terms under consideration, it is believed the company will be gainers to the extent of at least 90,000*l.* annually. The North Staffordshire have advertised for tenders to work their line on like terms; and we have heard of one company, the directors of which have just entered into a contract, the contractor being a well-known and highly-responsible party, for the entire traffic work for 10 years. He is to find fuel, attendants, and every requisite for traffic purposes; and at the end of 10 years, should not the agreement be renewed, he is to give up the entire moveable stock in as good condition as he found it, being annually allowed a depreciation per centage thereon. It is most gratifying to find that the utmost popularity is evinced towards the measure, and that there is every probability that, ere the summer months have passed, the majority of the lines in the kingdom will be worked under this sound and, doubtless, far more profitable system.

Before the principle has been practically brought into use, and while yet it is only a fact in embryo, it were an impossibility to even attempt an enumeration of the vast benefits and advantages which we sincerely believe will revert to the railway body from its adoption; but we have not the slightest doubt that it will do away with a vast amount of ill-obtained patronage, and flagrant jobbing and corruption; that while it will in many cases add two, three, or four per cent. to the dividend, it will do away all pretence on the part of directors for keeping open capital account; and at any time the true state of their affairs may be clearly ascertained by the shareholders. The confidence which this state of things will produce in the soundness of railway undertakings is incalculable; and if one measure more than another will tend to raise the market value of shares to anything approaching their former value, it must be the adoption of this measure. A man may have "too many irons in the fire," so may a company; and we believe the extensive machinery attached to the levitation engineering establishments for the construction of locomotives, tenders, carriages, &c., with the notorious jobbing and pickings attached thereto, has been not one of the smallest items in their wide-spread extravagance and delusion, which the new system will remove; and companies, or individual engineers, will be found, who will manufacture the necessary plant, probably 40 or 50 per cent. in cost below what any of the great companies have ever yet succeeded in producing. We glean from the observations of the *Observer*, the *Railway Record*, and some other of our contemporaries, and perfectly agree therewith, that the plan of working which offers the most advantages to the company, is to give the contractor a per centage on the receipts, coupled with a sum per mile run, and a per centage on the value of the plant for repairs and depreciation of the stock. The last two items should be at such a price that the contractor cannot make a profit, but a loss in the working and repairs. Thus, he has no inducement to send out two engines when one will do the work, for he would lose doubly by so doing, unless he was hauling traffic, for which the per centage on the receipts would pay him.

This plan offers another important advantage to railway companies, which they have as yet been unable to attain. It most fully introduces the system (of which the policy is universally admitted) of paying their employees according to the work done, in contradistinction to the principle of paying fixed salaries. But above all the advantages which are attained by this proposed plan, the most important is, that the interests of the company and the contractor are made by it identical, the interest of the latter clearly being to assist in developing the traffic by every possible means in his power, and to work the line in the most efficient manner, to induce passengers to travel by it—his profits being, as we have before shown, solely dependent on the receipts of the line. We cannot, for a moment, believe that shareholders will pay 1*s.* 3*d.* per mile, if they can have the traffic efficiently performed for 7*d.* or 6*d.*, and we trust the time is not far distant, when our friends who have still persevered in proving the advantages of the atmospheric system, will be enabled boldly to take their stand as railway traffic contractors, and a line ever so short once carried out, we have no fear whatever of the result.

Another feature which we may expect to see arise out of this new system is, the union of a few capitalists, or the formation of joint-stock companies, for the purpose of working railways by contract; and it is to be hoped that, after the great railway bubble has burst, numerous smaller ones may not arise from the same suds, possessing colours equally iridescent and alluring, but containing poison equally destructive. Of this we have, however, not much fear; those who have capital will hence be cautious how they invest it; and we trust the occupation of the wolf in sheep's clothing—is gone.

We do not intend these remarks, by any means, to allude to an advertisement in another column, signed "R. B. WATSON." We have known this gentleman many years, as an established share broker in Leeds, and also a commercial broker in Hull—he having resided 16 years in the former place and 20 in the latter. The object sought, that of a few gentlemen of capital, whose professions and habits have enabled them to gain experience in the working of railways, uniting for the purpose of undertaking the traffic by contract is perfectly legitimate; and as Mr. WATSON formerly rejoiced in adopting the motto, "Railways must progress," we trust himself and associates will soon find that "Railway contractors do progress."

Sydney letters to the 20th January have been received, by which it would appear that considerable shipments of provisions were being made to California, and surplus stocks of many articles that had been a drag in the market for some time past were being cleared for the gold country. Discoveries of copper, silver, lead, and iron are stated to have been made; a local paper refers to them as follows:—"It would seem that the district of Boronia, notwithstanding the abolition of the various sources on which it was supposed to have been dependent for its existence, is yet destined to become one of the most flourishing and wealthy in the colony. There appears to be no end to the riches contained in its soil—mines of all kinds are being worked; and, if report speaks true, with every certainty of proving profitable to the enterprising proprietors. First on the list is the copper mine of Mr. Throsby and others, on the Wollondilly, the ore of which is said to be very rich. Silver and lead have also been found on the same property. Mr. Ward, of Paddy's River, has discovered a silver and lead mine on his land, and specimens of the ore have been sent to Sydney to test the value thereof. And of Mr. Neale's iron mine, at the Ironstone Bridge, the public have already witnessed the success by the specimens of manufactured articles lately exhibited in Sydney. For this latter mine a number of hands are daily expected up, and when they arrive the work will proceed vigorously."

Advices to the 3d February have since been received. They contain little news beyond that which is of local interest. Mining adventures were progressing in New South Wales. The Fitzroy Mine, situated at Iron-bridge, on the great southern road, is favourably reported; stone and bricks were preparing for the furnace; in the meantime smelting was effected by means of a Cataline furnace, but machinery for extensive works was on the way from Sydney. Two shafts were being sunk, one 18 feet, and the other rather less. The ore that has been raised is very rich, and has the singular property of running into steel on being smelted. A company was forming, under the title of the Bathurst Copper Mining Company, capital 10,000*l.*, in 2000 shares, of 5*l.* each. The locality of this mine is at Sumarhill, on Campbell's River, about 25 miles from Bathurst; the ore is reported to be very rich, and there is abundance of soapstone on the ground, which is said to be the best for resisting the intense heat of smelting furnaces. Business was still dull. Bank bills on England had unexpectedly risen to 3 per cent. premium.

ST. JOHN DEL REY MINING COMPANY.

We have received the superintendent's annual report for 1848, preparatory to the approaching usual meeting of shareholders in the above company, and which, as a whole, may be taken as a highly satisfactory progress of the operations and view of future prospects. An immense deal of mechanical works have been constructed during the year, the underground works greatly extended, the water leats put in thorough repair and improved in construction, spalling-floors greatly extended, a new and commodious hospital erected, and every possible exertion appears to have been made, and successful means adopted to place this important company in a profitable and lasting position. Among other improvements, an incline plane has been laid down in the Cachoeira Mine, by which a carriage, with a kibble attached, moves rapidly from and to any part of the mine, by which the haulage of the stone is materially facilitated, and so successful was the experiment, that it was immediately decided to commence another for the Bahu Mine. Among other signs of prosperity, a new lode had been discovered, likely to prove exceedingly rich, and, upon the whole, the property appears in a state of present profit, and with prospects of long years of future prosperity, far superior to any antecedent period.

The only drawback to this gratifying state of things is the sanitary condition of the people during the year; this can have arisen from no want of care or attention on the part of the authorities, but is to be solely attributed to climate and atmospheric influences. The chief medical officer (Mr. Birt), says, in his report:—"The sanitary condition of the negro establishment during the year 1848 has been as unusually bad, as it was remarkably good in 1847. The causes co-operating to effect this difference are to me tolerably evident—viz., we have been visited by three distinct epidemics: two in which influenza was the prevailing disease, the third diarrhoea; and although neither of these periods were remarkable for mortality, yet it is utterly impossible for disease to rage to such an extent, without leaving certain traces prejudicial to the constitution and health of the subjects attacked, producing an aptitude for the conception of more active disease, and in diminishing the physical powers, so leaving the constitution less capable of resisting any further encroachment on its appliances. Of the 59 deaths, no less than 27 have been from diseases of the thoracic viscera and respiratory system, as follows:—Pneumonia, 12; pleuropneumonia, 4; pleuritis, 2; pulmonary apoplexy, 3; consumption 1; and bronchitis, 5. The most careless observer cannot have failed to remark how fatal has been disease in Europe after an epidemic of influenza; this arises from the morbid condition of the lungs and thoracic viscera, as caused by this disease, producing a predisposition in these debilitated organs to more active and immediately fatal disorders. Fever has also prevailed to an unusual extent, no fewer than 269 cases have been treated, whereas in 1847, 46 only are recorded. Perhaps a greater mortality has never existed at Morro Velho than during 1848; but the magnitude of the present establishment must be taken into consideration, and a comparison not only as regards population, but also as relates to the number of cases treated, as it must be tolerably evident to all that the chance of mortality is enhanced in a direct ratio with sickness."

It is, however, to be hoped, that so fatal a season may not again happen for years, and that the precautions taken will to the utmost mitigate the sufferings of the patients. Of the new hospital erected, Mr. Keogh, the superintendent, says—"It is an ornament to Morro Velho; while it is universally acknowledged that the salubrity of its site, its noble airy wards, its great cleanliness, its hot baths, and comforts of various kinds provided for the poor patients, do credit to the benevolence of the directors who authorised its construction." With regard to the general operations, he says—"Last year I was enabled to lay before you a statement of great and unusual progress, as well in the construction of new and expensive, but most useful works, as in the increased production of gold, and the consequent prosperity of the general concern. It is now my gratifying task to inform you, that the retrospect for the year 1848 is no less satisfactory, whether viewed with regard to important works actually completed, to others now in hand, or to the very striking increase in the produce of gold, and in the profits realised." These observations are fully borne out by the gradual and increasing produce of gold, a comparative view of which, for the three years, we give below:—

	1846.	1847.	1848.	Over 1847.	Over 1846.
Gold produced.....Oz.	132,419	170,392	219,244	48,852	86,825
Ore stamped.....Tons	34,933	40,234	58,123	17,889	23,190
Profit.....£	414,920	£21,536	£29,269	£7,733	£17,739

IMPERIAL BRAZILIAN MINING ASSOCIATION.

The report presented by the directors of this association to the shareholders, at the half-yearly meeting held on Thursday last, a full account of which appears in another column, will be found a highly interesting document. They have most certainly been placed in rather a peculiar—and, perhaps, as trustees for a large number of shareholders over an extensive and valuable property, situated in a distant portion of the globe—not very enviable one. After, throughout the previous year, Mr. Henwood had continued to give the most encouraging accounts of the appearances of the strata and of the progress of the works, accompanied by the usual average amounts of gold, and then, in one individual despatch, without any previous apparent doubt or want of confidence in the resources of the property, to breathe the nothing but despondency, and recommend a winding up of the concern, was certainly as unlooked for and extraordinary an event as could under any circumstances be expected; and we can well imagine the consternation of the directors on first catching a view of the contents of the ominous epistle. We cannot, of course, attribute anything like motives for this premature expression of opinion by Mr. Henwood, his character standing too high in the estimation of all who know him; but we fear it has emanated from an absolute want of confidence in himself, which a nervous temperament probably has perverted into a want of confidence in the resources of the property. Seeing, however, the continued usual average returns of gold from Bananal, and aware that nothing but properly-arranged machinery is required to put the shaft down to 50 fms, the depth originally proposed by Capt. Hitchens and agreed to by Mr. Henwood, the directors, we think, had but one course to pursue.

They have taken advantage of Mr. Henwood's self-proposed retirement, and have engaged Capt. Hitchens, of the Devon Great Consols Mines, to go out to the property, who we feel confident, from the very strong opinions he expressed in recommending Bananal to be purchased by the association—thus feeling himself, in some measure, personally responsible, from his previous long experience in Brazilian enterprise, and from his well-known general mining talent and mechanical ability—will very soon prove that his first views were correct; at all events, that there will be no difficulty in getting down to the desired depth. We have further great hopes, from the general opinions expressed by Captain Hitchens of this extensive—and yet, to a great extent unexplored—property, that not only will Gongo Soco be made to return profitably for years to come, but that Santa Rita will yet be turned to remunerative account, and the shareholders find, that after years of suspense and outlay, a period is arriving, when they will reap an abundant harvest.

DEVON GREAT CONSOLS MINING COMPANY.

In last week's *Mining Journal* we gave a full report of the annual meeting of this important mining company, and having since received the detailed reports of Capt. J. H. Hitchens, we find the operations in both the important departments of tutwork and tribute have been carried out in an effective manner, with proper judicious economy; and the description of other works generally, the erection of machinery, and other additional surface arrangements, bears testimony to the vigilance and foresight of good management, so necessary in such an important establishment. The number of fathoms driven during the year have been—Maria, 149 fms. 2 ft. 7 in.; Fanny, 207 fms. 5 ft. 1 in.; Anna, 189 fms. 1 ft. 6 in.; Josiah, 394 fms. 1 ft. 11 in.; and Fremontor, 71 fms. 4 ft. 8 in.—making in all, 1012 fms. 3 ft. 9 in., at an average cost of 37.19s. 3d. per fm. The aggregate amount of fms. in sinking shafts and winzes was—shafts, 92 fms. 1 ft. 6 in., at an average cost of 134.12s. 11d. per fm.; and winzes, 134 fms. 2 ft. 3 in., at 57.0s. 2d. per fm. In tutwork the monthly average of men has been 132, and tribute 181; the average monthly gettings of the former having been 27.13s. 6d. per man, and for tribute 37.7s. 4d. With respect to the ore ground in sight, a most important point in all mining operations, and more particularly so in a concern of such magnitude, there appears to be in Maria, 25,045z. worth; Fanny, 103,082z.; Josiah, 49,151z.; and Anna Maria, 13,182z.—making a total of 200,460z. In addition to this, there are at many points ore ground of high productivity actually proved to be holding down for the inference that it will continue, and showing every appearance to justify the above estimate. In the ample details given by Capt. Hitchens, of the position of the workings and appearances in all the sets, it may be fairly inferred that the property will continue a vast amount of highly-remunerative returns and a means of safe investment for many years to come.

THE COPPER TRADE.—We understand that some of the smelting monopoly recently communicated to Mr. B. Smith, their competitor, that if he would enter into their arrangements, the price of copper ore would immediately be lowered—a proposition which, we are happy to say, that gentleman would not listen to. This shows the power and advantages which some of the new processes of smelting place in the hands of those who adopt them. We are also informed, on good authority, that the smelters are in consequence using their utmost endeavours to enter into contracts with the importers of Australian and foreign ores, to secure for themselves the undisputed command of the market. Here they have likewise failed. Let the miners take encouragement from this.

IMPROVEMENTS IN RAILWAY WHEELS.

In last week's *Mining Journal*, we noticed that Mr. H. Smith, of West Bromwich, explained to the last meeting of the Institution of Mechanical Engineers the principle of a new solid wrought-iron railway wheel lately patented by him. We have since had an opportunity of inspecting one of these wheels, and it does appear to our humble experience in such matters, and on common sense grounds, taking the usual characteristics of the different qualities of iron into consideration, that the principle involves real economy, safety, and durability, in an extraordinary degree, and fully deserves the high encomiums passed upon it by the experienced chairman, and many other members of the institution. In reading the description, it will be remarked that although a hoop is formed in the first instance of rolled metal, the forging which it subsequently undergoes thoroughly alters its character, and it becomes one solid and homogeneous mass of metal, thus by no means coming under the category of *tyred wheels*, and precluding almost the possibility of any portion breaking and flying off at high velocities. All readers of railway information are aware of the fatal accident on the Great Western Railway, by which a large portion of the tyre of a common cast wheel was projected upwards into the air, and falling through the roof of one of the carriages, killed a passenger on the spot, also injuring others; numerous other accidents have happened in various parts of the kingdom, through the breaking of the tyres, and we believe the invention under notice is calculated to number such accidents among the things which were. Its durability also in securing a clean and even wearing surface and perfect homogeneity are great; while the disc portion, or all that within the flange and wearing exterior, may be considered as indestructible, as an outside hoop can at any time be welded on, in precisely the same manner as making a new one out of scrap iron, much easier, and in less time. We do consider the invention of vast importance to railway engineers and directors, and as Mr. Smith is quite ready to compete with the makers of other and inferior wheels, we think there can be little doubt of their success. Although appearances, perhaps, in such matters are nothing compared to safety and economy, we would just observe, that there is not that clumsy appearance which might be expected in a solid wheel; they gently curve inwards from the periphery to a thinner metal, and then thicken again to the axle-box, which is, of course, sufficient to carry the necessary weight, which form takes off all heavy appearance, and saves metal; each 3-foot wheel weighs about 4½ cwts.

COKE OVENS.

[Specification of patent granted to William Wilkinson, of Yarrow, near Gateshead, Durham, coke manufacturer, for certain improvements in the construction of coke ovens, and in the machinery or apparatus to be connected therewith.—Inrolled May 16, 1849.]

This invention is stated in the specification to have relation to three different points—1. To supplying the air necessary to effect the charring of the coal in a more equable manner than heretofore.—2. To removing the coke from the ovens in such a way as to supersede manual labour.—3. To the application of the heated gaseous products of combustion to the evaporation of saline solutions.

The first part of this invention is carried into effect by constructing the coke oven with flues formed in the brickwork, near the arch, such flues being open at the front of the oven, and being situated at the two sides and back thereof, forming a continuous air passage throughout, having a number of lateral air passages communicating with these flues and the interior of the oven. The door of this oven is made the entire width thereof. The patentee prefers that this oven should be constructed of the following dimensions—14 feet long by 8 feet wide, and 3 feet high to the springing of the arch, with an arch of 4 feet radius. The floor to be raised 1 foot above the ground, with an inclination towards the front of the oven of 6 inches. When in operation, the air is allowed to pass through the flues and lateral air passages, upon and into the incandescent mass contained in the interior of the oven, facilitating the coking.

The second part of this invention consists in having clearing plates placed at the back of the oven, rods being attached to such plates at the back thereof, passing through openings at the back of the oven to its outside; these rods have a rack formed on the underside, into which a pinion takes, such pinion being attached to a shaft resting in suitable bearings, running parallel to the back of the oven and at right angles to the rods affixed to the plates. The pinions are capable of sliding upon the shaft, if desired. This shaft is carried throughout a whole range of ovens, and being connected with a steam-engine, or other prime mover, it is obvious that the proper rotary motion being imparted to it will carry the pinions round, and cause them to act upon the racks attached to the plate-rods throughout the range of ovens, pushing the plates forward, and, consequently, the coke contained therein: thus effecting the clearing of the ovens without manual labour.

The third part of the invention is thus carried into effect:—Behind the coke oven, but above the level thereof, is placed the evaporating pan; beneath which flues are situated, communicating at right angles with other flues passing into the oven. Situated underneath the evaporating pan are furnaces for the purpose of raising the temperature of the flues and controlling evaporation. Beyond the evaporating pan is placed the crystallizing pan, with furnaces beneath, and having communication with the evaporating pan by means of a pipe, furnished with a stop-cock, and also communicating with a receptacle for the salt. When in operation, the evaporating pan is to be filled with salt water; and when the liquor is supposed to be sufficiently evaporated or concentrated, a quantity is to be let into the crystallizing pan, and there purified by a well-known process, previous to carrying out the operation.

In conclusion, the patentee claims, under the letters patent granted to him, to the following effect:—1. The oven and process of coking, before set forth and exemplified.—2. The mechanism applied to coke ovens for discharging the contents thereof, set forth and exemplified by the sheet of drawing attached to the specification, or any analogous machinery.—3. The application of the products from the coking oven to the evaporations of saline solutions.

Patent-office and Designs Registry, 210, Strand, May 17.

RAILWAY TRAVELLING TRUNK.—Mr. James, trunk-maker, of Oxford-street, has recently registered an improved trunk, specially adapted for railway travellers, being rendered of extra strength and neatness, by the adoption of iron binding, and brass-headed nails. It also possesses the novel appendage of a collapsible hat case, which may, if desired, be compressed, or collapsed, into a small space at the bottom of the interior, leaving nearly the whole of the trunk free for the reception of luggage. The collapsible hat case may be fitted to the ordinary trunks, if desired.

COMPARATIVE STATEMENT OF TRAFFIC ON THE YORK AND NORTH MIDLAND RAILWAY.—The lines of the York and North Midland Railway Company comprise in extent 205 miles, and are the medium of communication between the manufacturing districts of Lancashire and Yorkshire and the port of Hull, as also with the eastern side of Scotland, and the great mining counties of Durham and Northumberland, the coal and goods of which in transit southward, with the whole passenger traffic, are obliged to traverse the York and North Midland lines. It appears, of the immense traffic which does pass along a railway of such extent and so situated, that the Whitley Stone Company, during the 18 months ending December 31, 1848, supplied 1 part in 23 of the whole tonnage on those lines; and though using 6 miles only of that part of railway nearest to Whitley (the place of shipment), have contributed in dues and rent of waggons 1 part in 72 of the revenue derived from traffic, and 1 part in 152 of the whole revenue from every source.

RAILWAY TRAVELLING.—The number of passengers conveyed on all the railways in the United Kingdom, during the year ending the 30th June, 1848, was 57,965,070; of this number 7,160,779 travelled in first-class carriages, 21,696,509 in second, 15,241,529 in third, 13,092,489 in parliamentary, and 749,765 in mixed class. The total amount received from all classes of passengers during the same period was 5,720,382z. 9s. 13d.; of which 1,792,533z. 8s. 5d. was for first-class, and 2,352,152z. 11s. 6d. for second-class fares. The amount received for conveyance of mails, goods, cattle, &c., was 4,213,169z. 14s. 5d. Thus the total receipts were 9,933,552z. 8s. 7d.

ELECTRIC TELEGRAPH IN THE RIVER THAMES.—In the Court of Common Council, on Thursday, a report was brought up from the Thames Navigation and Port of London Committee, for sealing a deed relative to laying down the electric telegraph in the River Thames. It stated that the committee had taken into consideration the application of Messrs. Blunt, civil engineers, for permission to lay down an electric telegraph in the River Thames, to communicate with a coast line telegraph. That as the committee are of opinion the proposal for laying down the lines was of public and national importance, they were disinclined to prohibit or embarrass the undertaking, and, therefore, did not object to its being carried into effect, but did not authorise it, so as to incur any responsibility, leaving Messrs. Blunt to lay down lines at their own risk, they undertaking to do no damage either to the public or to individuals, and to stop all further works when required so to do, and to remove any work that shall be found injurious. The report was agreed to, and the City seal was set to the conditions prescribed by the City solicitor.

Original Correspondence.

ON THE RATING OF RAILWAY PROPERTY, AND OF STEAM-ENGINES GENERALLY, FOR THE RELIEF OF THE POOR.

SIR,—As it has been the practice until very lately to rate freehold property only to the poor, it is much to be regretted that any deviation from that general rule should have been attempted in a manufacturing and mercantile country like our own, without the sanction of an Act of Parliament, as it is very clear that any partial deviation from so old a practice cannot but be fraught with great injustice towards such parties as the deviations in question may affect. It is one of those practices which let in the greatest of all abuses—viz.: that of creating one custom for the rich, another for the poor, inasmuch as a poor man, with his little personal property employed in a small steam-engine, to carry on his trade, is rated for the same; whereas his rich neighbour, who has an immense personal property employed in horses, carriages, furniture, &c., pays nothing. It has for a few years been partially the practice to rate steam-engines, which was, I presume, brought about by some lawyers arguing that steam-engines are a "power," and ought to be rated! Why not horses, which are also a power? In the former instance the power is maintained by feeding with coal; in the latter by feeding with hay and corn. This is a point the railway companies have at length been made to feel, as both their freehold and personal property is made liable. If personal property is to be rated to the poor it should be so dealt with in toto, particularly all funded property, which has a greater proximity to freehold than any other of its class, regarding which there are many reasons why it should not escape contributing its quota towards the poor's rate. To this end a general property tax, for the relief of the poor, would probably be at once the most simple and efficient. If, however, it should be thought better to provide for the poor by a parish rate upon personal as well as freehold property, there would be no difficulty in apportioning that of railways amongst the individual parishes passed through—viz.: the freehold consisting of land, buildings, and fixtures; the personal of the iron rails, according to the weight laid down in each parish, and the gross amount of what is termed the rolling stock, by a division amongst the parishes passed through proportionate to the length of rails in each parish. It is much to be wished that this unjust and irregular practice of rating property to the poor should be remedied by a speedy enactment of the Legislature. It will, perhaps, be as well to state here, that I have never been a holder of railway property to the amount of a single share, in order that I may not appear to be writing on this subject from interested motives.

Barnborough Hall, Rotherham, May 15.

HENRY HARTOP.

RAILWAYS AND MINES—By PLACER.—No. III.

"Lost men suspect your tale untrue,
Keep probability in view.
The traveler leaving o'er these bounds,
The credit of his book confounds."
—Gag's Fables.

SIR,—We are indebted to your correspondent, "ENGINEER," whom we consider has dealt very fairly with our previous remarks on the above interesting subjects in his paper called "No. I." in your last *Mining Journal*, and premising that you and your readers will agree that discussion is the best means of eliciting truth, we take the liberty of offering a few remarks in reply, relying upon your usual liberality in giving them a place in your columns. Your correspondent can show that he possesses tact as well as talent, for the gist of his letter is contained in the short concluding paragraph, wherein he appeals to us, "that it is unfair to take the difference in prices of railway shares at different dates as a loss." We admit this to be a point open to discussion to a certain extent. "ENGINEER," doubtless, implies that, although THIRTY MILLIONS STERLING of depreciation may be shown to have taken place in railway shares within the last nine weeks, that amount of property has merely changed hands, and is not lost capital. True, the railways which represent the capital remain, and somebody hold the depreciated shares, whilst the difference in their value between March 10 and May 17 has gone out of somebody's pocket. Let us take an instance. At the first of these dates, GREAT WESTERN shares were selling at 97; at the latter they were at 77, or 20% per share reduction. Thus, if "ENGINEER" himself were to require a loan upon 100 such shares to-day, he would obtain just 9000l. less upon them (being the sum representing their actual depreciation in value within the two periods), and have to sustain, besides, an absolute and perceptible loss of dividend, as a natural consequence of depreciation of capital. This case, supposititious in one sense, but real in another, represents millions of others; and if it does not show loss to the satisfaction of "ENGINEER," it cannot show gain; whilst it must show, if anything, either one or the other.

"ENGINEER" commences his able letter, by assuming that our remarks hitherto have a tendency antagonistic to railways—a position, the truth of which we admit to a certain extent, inasmuch as we contend that the capital lavished and lost upon railways would have assisted to raise and develop a vast amount of legitimate mining enterprise, which it has, instead, either crippled or destroyed. Let us ask, how it was the railway panic operated, like the Upas tree, upon the mining interests of this country?—or how a ruined shareholder in a railway forced to pay his calls, could have the means left to continue his more optional interest in a mine? Thus, mining in 1847, either drooped and fell, or struggled through the crisis with a diminished number of shareholders, as we now find it.

Of the origin and objects of railways there is so much to be said that the subject would fill a volume, whilst our present opportunity precludes us from more than a sketch. The best exemplification of a "RAILROAD" within our knowledge, is that made from Gloucester to Cheltenham, some time antecedent to the year 1817, to convey coals from the River Severn; that was the proper object of a railway, and history tells us, that a new coach road was constructed parallel with it from one town to the other—the road for the coach, and the rail for the coals. How much happier would England be at this moment, had the two principles been kept "antagonistic," instead of being combined—coals and people together, and oftentimes in collision! notwithstanding the signal posts, lamps, and all the hues of the rainbow, the screaming whistle, and other "appliances and means" emanating from the scientific brain of man, in addition to the man himself to "adjust the points, with a complication of rules and bye-laws in his pocket, to guard life and property. We have never yet seen a book, entitled "THE PLEASURES OF THE RAIL," although we infer that the subject would have been caught up long ago by the literati of the day, had there been any "pleasures" to record, which is certainly a dubious question.

Before arriving at the more statistical point of our remarks, but always keeping in view that "ENGINEER" is of opinion that "there is no reason why railways should not revert to their original state on the gradual subsidence of the exciting causes of depression," we may allude to a *freak* in railway enterprise, which, we think, will prevent that particular line, so signally burdened with unprofitable branches, ever righting itself so as to pay a respectable dividend. We allude to the SOUTH-EASTERN; the key to the continent, whose 33½ shares are quoted 20½—perhaps as much as they are, or ever will be, worth; and in attempting to show one cause of their low value, due allowance must be made for circumstances over which the projectors might not have had, in the first instance, sufficient control.

SOUTH-EASTERN RAILWAY.

DISTANCE OF THE TERMINAL TOWNS FROM LONDON.

	By the coach road.	By rail.	Excess by rail.
Dover.....Miles	71	88	17
Ramsgate.....	72	97	25
Deal.....	73	102	29
Margate.....	71	101	30
Sandwich.....	68	98	30
Canterbury.....	55	81	26

Modern "improvements" in travelling do not cut a very enviable figure in the above table; and whether this costly system will bear the test of inquiry and comparison is not a question to be lost sight of in a discussion on relative matters. Thus, since all traffic (like the sea) had already left the grass-grown streets of SANDWICH, it was certainly an odd sort of attempt to bring it back by lengthening the distance 30 miles! As to MARGATE and RAMSGATE, a railway, to compete with five or six hour steamers, is a downright and flagrant absurdity, especially when it is taken into consideration that the cost by the latter route is not more than one fourth of that by rail.

Pending the reports of committees of investigations yet to come, we make use of that which is occupying the largest share of the public attention at the moment, and deservedly so, from the peculiar interest attaching to its now tolerably well-understood position, and the probable influence its "startling" disclosures will have upon other lines heretofore subject to the same domination. A serious question arose at the last EASTERN COUNTIES meeting, whether a dividend upon its stock should

or should not be paid for the current half-year. The committee disputed, and the ancient directors were for recommending it. All the world knows that the committee carried their point—so there is an end of all question of dividend for a time; yet the shareholders would naturally be glad to know when they may look forward to its resumption. This is a point we propose to examine.

The capital of this company is about EIGHT MILLIONS AND A HALF; interest thereon, at 5 per cent. £425,000
Amount of interest on loans represented by debentures, and, therefore, in the nature of a mortgage, £896,955; interest thereon 44,850
Interest payable on bonds 19,693
Interest payable on preference shares on guaranteed lines 109,932

Total £599,475
The traffic (or income) in passengers and goods, which are, as nearly as possible, about equal in amount, may be taken at, per week £15,000
Deduct for working expenses, 45 per cent.; wear and tear (above the average of other lines, in consequence of the large portion of goods traffic), but say 5 per cent.—TOTAL, FIFTY PER CENT. 7,500

Net earnings per week (or per annum, £390,000) £7,500
Out of this sum there must be paid, before a dividend can be thought of, the three last items of annual interest, amounting to 174,475*l.*, and leaving a surplus of 215,525*l.*; but, inasmuch as the DEBTS of the company not yet charged to CAPITAL far exceed this latter sum, there is nothing whatever left for dividend; and at present the capital of the EASTERN COUNTIES ranks as *nil*—it is, in fact, lost, dissipated, gone. What time, increased traffic, better management, and economy may do, to restore a dividend, remains to be seen. What will be the permanent amount of it, whether one-half or one per cent., is a problem, which perhaps your correspondent, in his future promised letters, will kindly assist us to solve.

In taking our present leave of "ENGINEER," we could wish him a better theme to write upon than RAILWAYS as a safe property to invest in. Most of them are just the reverse of that—absolutely unsafe, because perfectly fictitious in value; and although there may be few in so utterly an insolvent state as the EASTERN COUNTIES, it is to be feared that others will prove so sooner or later; for, be it remembered, that both the origin and management of them have been in hands of few individuals, and those few reduced by the majority yielding to the guidance of a minority, until extravagance of every kind, borrowing, and guaranteeing, has become a system, which would have been "better honoured in the breach than in the observance." The purely legitimate object of a railway should have been to connect distant places with each other as shortly and as cheaply as possible—to convey our millions of tons of manufactures to our shipping ports, and our imports of raw produce to the manufacturing districts—our coals, and other minerals, to the places of consumption, and to have made the carrying of passengers a secondary consideration, leaving the rural districts to themselves, or, at any rate, the choice of the coach or the post-chaise.

Instead of this, the accomplishment of a perfect monopoly has ended in the ruin of thousands "of shareholders, or *dupes* as they are called"—whilst, in the eagerness for traffic, every kind of cheap excursion is held forth as a lure to the lower classes to spend about ten times as much in locomotion as they ever spent before railways were formed, and, in most cases, far beyond what they can afford. Even the man of wealth, whose time and money are his own, approaches a station with feelings of languor and indifference—glad after he has taken his seat that his journey is over in safety, and happy when he finds himself surrounded at his villa, or at his inn, with associations amongst which the "pleasures and advantages of railway travelling" not only form no part, but would rather be forgotten than remembered.—*London, May 18.*

MR. HORSLEY'S PATENT PROCESS FOR PURIFYING WATER.

SIR,—No one can doubt for a moment the paramount importance of pure and wholesome water. It is, by proper emphasis, the blessing of blessings—the essential element of human enjoyment. Disease and death hinge on its impurity; and health and life are vitally connected with its freedom from noxious principles. The earnest search after filters, and ready promptitude to supply the want, from Robins to Ransome, all evince the uneasiness of the public, and their feverish sensibility to the importance of the question; while the numerical array of filters paraded before the public demonstrate the iniquity of dissipation. The blessing and the boon of a beneficent Providence are concentrated in this emphatic promise—"Thy bread shall be given, and water shall be sure."

No person capable of exercising the elements of his reason can question the injury done to health by *hard water*—that is, water invested with calcareous or other earthy impregnations; and as little doubt can arise on the dangers connected with the presence of the germs and developments of animalcular life—in fact, of organic matter of any kind, whether derived from an animal or vegetable source, fetid exhalations and lethal gases; and septic poisons are the offspring of their decomposition; and to be compelled to swallow potatoes of water insistent with life, vivified at a season when the cool and refreshing beverage is most needed and essential, is an aggravated feature of the evil.

Incrustations in boilers, &c., I shall in a future communication fearlessly discuss and honestly investigate. My object at present is simply to consider the bearing of pure and wholesome water on human life—not to speak of its importance to the inferior tribes of creation; and though it has never been suspected, or mooted, it is a question of very serious moment how far many of the diseases incidental to horses and cattle, as well as sheep, and which have assumed of late such malignant types (clearly of an infectious character, and as unquestionably aggravated by local circumstances), may or may not be fairly attributable to stagnant and otherwise bad water.

In the county of Norfolk, for example, where *hard water* almost universally prevails, in the same ratio do calculous diseases obtain, and the Norwich Hospital has long been, *par excellence*, too prominent in the numbers which are the victims of calculous disease; and it is, therefore, also a legitimate inference to believe that gouty concretions and biliary calculi are linked as cause and effect to *hard water*, or water holding more or less earthy matters in solution. As to *gout* or *bronchocoele*, as developed on the continent, or in this country, especially in Derbyshire, I never doubted its being chargeable directly and immediately on bad water. My observations and investigations in Switzerland leave no doubt whatever on my mind as to the essential root of the evil.

What has been termed "English," or "British cholera," as well as other seasonal diseases prevalent in warm summers and in autumn, have been most unreasonably and unwarrantably charged on eating *fruit*; but the combined testimony of the physicians and other eminent medical gentlemen of London entirely falsify the gratuitous assumption—a moderate quantity of ripe fruit is calculated to sustain health. The best things may be abused, and *unripe fruit*, and an *immoderate* quantity of even ripe fruit, may derange the functions, but these are the *abuse* of a beneficent boon. The truth is, that the diseases referred to have to do with impure and unwholesome water, impregnated with organic matter, connected mostly with animalcular existence, or the fetid gases and exhalations resulting from their destruction and decomposition, such as sulphuretted hydrogen and hydrosulphate of ammonia. The cases already referred to in a former communication of mine, of horses and cattle, as well as human beings, being seriously affected by the waters of the Ness, as well as the cessation of cholera at Dumfries among its inhabitants on their abandoning the use of the waters of the Nith, seem to me to amount to demonstration.

I have already alluded to the decomposition of organic matter in the Hull water, and the presence of fetid gases and animalcular life after the water had passed through the filter. The Thames water on shipboard has emitted at sea inflammable gases, which have been fired at the bung-hole by a lighted candle; and a surgeon on board an East Indian man once informed me he had seen Thames water swarming with myriads of living beings, and otherwise nauseous beyond measure. What wonder that sickness should so frequently seize upon the crew in circumstances like these! Captains Snape and Boxall, of the 63d regiment, who were engaged in the ill-fated expedition to Walcheren, told me that such was the horrid state of the water they were doomed to drink, that their teeth were used as strainers! What else could be expected but disease and death among the noxious emanations and poisonous water of the swamps of Walcheren.

No FILTER on earth can remedy these evils, for this plain reason, because no mechanical means whatever can separate the elements of a chemical combination. Let it be remembered, therefore, that the mere retention of feculent, or other matter, mechanically suspended, cannot in any way alter the chemical composition of water, which remains precisely as it was, hard or soft, as the case may be, or imbued with the germs of animalcular life, to be subsequently vivified by the vital warmth of the sun, &c. Mere transparency is nothing to the purpose; indeed, it is a curious

fact, that some of the *hardest* waters in existence are remarkable for their peculiar crystalline transparency.

Mr. Horsley's patent process seems to me to strike at the root of the evil, and to be the very first plan ever proposed for this end and purpose. I must, however, resume this GREAT QUESTION in a subsequent communication.—J. MURRAY: *Portland-place, Hull, May 9.*

"THE SCHOOLMASTER ABROAD?"

SIR,—Amid the diffusion of science and emanations of knowledge, the ignorance which universally prevails astonishes me beyond measure. There is light enough, and easily accessible, but "the darkness comprehendeth it not." This reflection was naturally elicited by the late occurrence at "Miss Mann's establishment," in the neighbourhood of the "great metropolis." Here four human beings lost their lives from ignorance the most besotted—ignorance which might throw Paganism into sunshine, itself eclipsed. In this phenomenon of the nineteenth century it should seem what is called "prepared or patent fuel" was employed in a stove without a chimney! It turned out to be merely charcoal made from common fire, and not oak, as pretended by the sellers. As to the kind of wood, however, in the form of charcoal, it would make no earthly difference in the danger accruing from the gases—carbonic oxide and carbonic acid gas—the inevitable products of the combustion of charcoal, from whatever source derived—lethal emanations, all of them. It seems that this prepared or patent fuel was sold at "an extravagant rate;" and a "portable stove," which claims the name of "Carman" for its author, was employed on this fatal occasion. The insane ignorance altogether displayed on this occasion far exceeds the melancholy catastrophe of the *Londonerry steamer*; and had I been one of the jury on the coroner's inquest, neither the author of the stove nor that of the prepared fuel would have escaped; for the rest, pity would have pardoned unparalleled ignorance.

Perhaps you may remember that, some time ago, a very dangerous plaything, called Harper and Joyce's stove, was introduced; it had, in like manner, its "prepared charcoal," and of which Carman's stove, and its adjunct, seem to have been the *crème repêlée*. This marvel of the time proved a "nine days' wonder;" it was exhibited at the Jerusalem Coffee-house, and sufficiently stared at; and, while the mass marvelled, Science "laughed in her sleeve" at the scene, and this extravaganza of folly; even the ex-Chancellor Brougham (*cradit Judæus*) had it placed on the dinner table "to diffuse a genial warmth," and carried it, too, with him in his carriage. What "case-hardened" lungs must Brougham have been blessed with! At length the bubble burst; James Tricky fell a victim to watching the stove, in St. Michael's Church, Cornhill, and others perished; and no less than nearly 60 persons were removed at one time from a church in Norfolk in a state of partial or total insensibility. The French *savans* marvelled, as well they might, at what this new process of combustion might be. Gay Lussac got a portion of the "prepared fuel," and found it merely the charcoal of fire deal. Then it was pretended that it was steeped in a carbonated alkali—*tant pis*. This would only add "fuel to flame." The carbonic acid gas displaced from the carbonated alkali would, of course, aggravate the evil—two blacks will never make white. The parallelism of these two cases is very remarkable; it is simply Harper and Joyce *redivivus*. I did my best to expose the imposition of Harper and Joyce at the time, but it seems the "snake was only scotched." J. MURRAY. *Hull, May 8.*

ELECTRO-MAGNETIC ENGINE.

SIR,—The subject of a locomotive-engine, propelled by electro-magnetic agency, has been recently introduced in your pages. You will remember, some years ago, I brought before the public, through the medium of the *Mining Journal*, the case of Mr. Davidson, of Aberdeen, with whose very interesting exhibition of electro-magnetic engines, in the Egyptian Hall, Piccadilly, the solicitor of Mr. Talbot so rudely interfered. Numerous were these working electro-magnetic engines—saw mill, turning lathe, and many more; among others, an electro-magnetic impelled locomotive, which whirled its passenger round a circle at the rate of nearly 100 miles an hour, and I can personally attest the ease of this flying transport. I knew Mr. Davidson at Aberdeen, and recognized his ingenuity long before Mr. Talbot was known to science.—J. MURRAY: *Portland-place, Hull, May 15.*

SAFETY URN.

SIR,—How far the Count de Werdinsky's plan for the destruction of the "fire-damp" in mines, as eliminated in his letter to Lord John Russell, is either practicable or safe, I shall not dogmatically venture to decide, whatever doubts may be reasonably entertained. Twenty-five years ago I proposed and published a *safety urn*, for consuming the fire-damp in the mine; it was at once simple and safe. J. MURRAY. *Portland-place, Hull, May 15.*

VISUAL IMPRESSION ON THE RETINA.

SIR,—Whilst making the experiments detailed in the *Mining Journal* of the 12th inst., on the decomposition of light by reflection, I observed the following curious effects:—On looking through a hole made with a pin in a card, I noticed two sets of small black rings, surrounded by light ones, the interior of the nearest set being also of the same degree of brightness as the white ring outside. The nearest set of rings are very distinct, the remote ones more obscure, having a misty or nebulous appearance. The cause of these rings seems to be permanent and fixed, or, at least, is incapable of motion beyond a certain space. When I wished to look towards the right, without sensibly moving the eye, the rings moved to the right; when to the left, they moved to the left; when upward or downward, they moved in the corresponding direction; and on steadily observing any object, they remained quite stationary. The motion of the nebulous rings is quicker, and extends over a larger space than that of the others—at the same time, they are confined to certain relative limits, and their origin seems to be identical. The rings in each set preserve the same distance from each other, in whatever direction they move. The permanency of these rings show that they result from the mechanism of the eye, and, in all probability, from impressions made on the retina, or nervous coats, by light; or, perhaps, they are produced by inequalities natural or accidental in those coats, which act in a similar manner to inequalities in glass, and cause some of the light to deviate from its proper course, before it produces its natural effect on the optic nerve. The card, by obscuring the light, renders these effects visible.—J. J. LAKE: *Royal Laboratory, Gosport, May 16.*

STEAM-BOILER EXPLOSIONS—MR. A. DUNN'S INVENTION.

SIR,—This invention, which I have inspected in its details, deserves, from its merits, to be ranked with that of the Davy lamp; and, should any fatal accidents hereafter arise from boiler explosions, they will be chargeable wholly to the neglect, or indifference, of manufacturers in not adopting Mr. Dunn's preventive apparatus. No engineer, unless bent upon suicide, would neglect the timely warning which the signal bell will give in every instance with unerring certainty.

In a fatal instance of explosion which came under my immediate notice, and in which three lives were sacrificed, it appeared that the water had got very low in the boiler, which was hemispherical, with the bottom indented inwards; the boiler was worn very much in some parts upon its upper surface by atmospheric exposure for many years; and the plate was not thicker than a shilling in one or two places. The sides, however, around the bottom were not worn, and were fully three-eighths thick. There appears to have been no more water in the boiler than would lodge round the angle formed by the sides and bottom, leaving the central indentation dry, and probably red-hot—the sides, a few inches above the water line, being in the same predicament. The engineer knew that the water was low, and beyond the indication of the float, which did not range sufficiently; he was, therefore, uneasy, but yet was not aware how low the water really stood. The engine was standing for a short time; and the engineer had been bullied by the manager, and dared by him to lose steam, either by letting it off, or by letting on the supply of water. Trusting that he should have immediate orders again to start the engine, and thereby be able to let on a supply of hot water in time to avert any mischief, and fearing to disobey orders by letting off steam, damping his fire, or otherwise, the engineer delayed until the increase of temperature brought on the fatal moment of explosion. The boiler was cut off as with a knife through the thickest and strongest of the plates, a few inches above the bottom, probably exactly at the water line; and the upper or hemispherical portion was separated all round from the bottom, and thrown to a great height perpendicularly; for it fell in an inverted position, almost exactly upon its former bed. Now, had this boiler been furnished with Mr. Dunn's warning bell, no lives would have been lost. The manager would not have dared to disregard the signal; and, even if he had, the engineer, with his brother, his wife, and two children, who were seated or standing

upon the boiler steps, would have heard the bell, and would, of course, have consulted their own safety. This engineer was a careful, steady man, who had worked an engine for 14 years without any accident. The immediate cause of the accident was the absence of any sure indication of the temperature within the boiler. The pressure of the steam was insufficient to rupture the plates of the boiler, when no thicker than a shilling; yet the instantaneous explosion effected a separation through the strongest and thickest portion of the sides next the water line.

The more minutely and closely the merits of Mr. Dunn's invention are examined, the higher will be the opinion of them formed by unprejudiced parties understanding the natural laws upon which Mr. Dunn has founded his method, and who can, at the same time, perceive the ease and certainty with which the invention can in every instance be successfully applied.—ROBERT MURPHY: *Coleford, May 16.*

RICHARDSON AND CO.'S PATENT BRASS AND COPPER TUBES.

SIR,—We perceived, in your *Journal* of the 12th inst., a communication, signed "Observer," calling in question the novelty of our improvements in the manufacture of brass and copper tubes, embodied in a patent recently granted us. It is evident "Observer" is not a long-sighted one, and that he has meddled with a subject of which he knows nothing, and his *native ingenuity* has been applied to the purpose of perverting the truth. Had "Observer" the wish or capability of furthering the advancement of science, he would have told us his real name, and not have borrowed one to which he can lay no claim; also, where our process has been heretofore used, with what results, and if any tubes produced, to whom sold? I trust "Observer" will receive our admonition in the spirit of charity. *Darlaston Tube-Works, May 17.* W. H. RICHARDSON, JUN. & CO.

ECONOMY OF PERCHLORIDE ENGINE FOR RAILWAY TRANSIT.

SIR,—In the experiments which have been made on the atmospheric principle of railway propulsion, it was found that a considerable loss of power was occasioned by the attenuated air in vacuum pipes absorbing caloric from the surrounding atmosphere. On hearing of the proposed application of the exhaust steam from the steam-engine for generating "vapour of perchloride, or other easily vapourised liquids," it occurred to me, that if the heated air discharged by the piston of the air-pump was applied in a similar manner, the absorption of caloric by the rarefied air in the vacuum pipe, in lieu of being an obstacle to the application of the atmospheric principle, would prove a real advantage. Subsequent reflection and investigation of the subject has tended materially to strengthen and confirm that opinion. From the report of the commissioners appointed by the French Government, "to examine an apparatus working by means of the vapour of perchloride," which has been translated and published by the promoters of the "Combined Vapour-Engine Company," it appears that in some of their experiments a pressure in the vapouriser of perchloride of 16.5 lbs. above the pressure of the atmosphere was obtained, with a vacuum in the condenser of the steam (viz.: vapouriser of perchloride) of from 15.7 to 18 in. of mercury—thus proving that the heat derivable from the waste steam applied to the external surface of the tubes of the vapouriser, at a temperature considerably below the boiling point of water, is sufficient to develop a pressure in the vapouriser of 16.5 lbs. The temperature at which the air would be discharged from the air-pump of an atmospheric railway will, of course, depend upon the degree of exhaustion in the vacuum pipe, the temperature of the surrounding atmosphere, and other circumstances. Mr. Brunel, in his evidence before the "Parliamentary Committee on Atmospheric Railways" in 1845, assumed it at 25° being 38° above the boiling point of water. If that degree of heat may be taken as the mean, or even the maximum, temperature at which the air is discharged from the air-pump, it is quite certain that a considerable power may be derived by the application of that heat for the purpose of vapourising "perchloride, or other easily vapourised liquids." As water-power is applicable, it may be adopted as one source of economy in working on the atmospheric system of propulsion; and it appears to me, that a perchloride engine might be worked in conjunction with the water-power to considerable advantage; each pumpful of air as it was discharged from the air-pump would enter the vapouriser, where it would remain during at least the first half of the succeeding stroke, when it would begin to be expelled, and finally replaced by the discharge of the next pumpful of air; the intervals that elapse between the discharges of the heated air are highly favourable, as they afford time for the absorption of its caloric.

In addition to the valves connected with the air-pump, it would be necessary to provide one or more for the discharge port of the vapouriser; otherwise the advantage of the contraction of the air in the vapouriser will be lost; but it is probable that the signal failure of the first rude attempts to apply the atmospheric principle to practice has induced the belief in most of your readers, and the public generally, that the principle is abandoned for ever. I, however, am of a different opinion, and for this reason—viz.: that, as the principle has been demonstrated to be correct, the means for economically applying it to practice, if they have not already, will soon be discovered, especially if men of inventive genius could be led to perceive the incalculable advantages, both scientific and social, of amalgamating their means and combining their energies. *May 10.* AN ENGINEER OF THE NEXT GENERATION.

STEAM-CARRIAGES ON COMMON ROADS.

I have observed allusion made to the circumstance of an enterprising party being now engaged in constructing a steam-carriage for common roads, which they mean to try on the road to Reading, and contemplate being enabled to convey the public at $\frac{1}{4}$ d. per mile; permit me to state, in order that an erroneous impression may not be made, that the price named is for what is termed outside passengers. It is proposed, should it be deemed needful, or desirable, to make provision for three descriptions of passengers—viz.: first, second, and third-class, to charge 1*l.*, 1*l.*, $\frac{1}{4}$ d. per mile—which they imagine will afford a much larger return for the outlay than the most favourably constructed railway that has ever yet been made. The average speed intended is 12 miles per hour, including stoppages—thus affording the means of passengers being taken up and put down on any part of the road; the party, therefore, hope to find that by far the greater portion of the public will be influenced by this great convenience, and economy of money, to patronise the undertaking, and deem that the advantages gained will amply compensate for the loss of time. *5 mo., 15th.* ONE OF THE PARTY.

RADLEY'S PATENT AIR-PUMP.

SIR,—A more attentive perusal of the *Mining Journal*, of the 28th of April, brings me acquainted with another instance of the flagrancy of the law and practice of patents of invention, and custom of imparting to defective ideas and things the importance of more meritorious inventions. Mr. Siemens's air-pump has few good qualities, with needless complexity, conjoined to some of those discrepancies and assumed *principia*, which most inventors seem so prone to bring to book, and then with old wives' fondness hug. The tenth claim of a patent granted to me in 1845, describes a double action ram and plunger-pump, capable of exhausting the contents of one vessel, and condensing them without intermediate machinery, consisting of an inverted working barrel of cast-iron, with a valve situated at top, and opening into its cavity, wherein works, by accurate adaptation of ordinary fitting, a ram through a stuffing-box at the lower end of the barrel. The ram is provided with a valve at its upper, and a stuffing-box at its lower end, through which plays a plunger, having also a valve at its upper extremity, opening into the conduit which traverses its axis. The plunger below and working barrel above are fixtures, the ram alone moving in its double capacity of barrel and bucket, and the plunger, and within the main barrel, by means of two side gudgeons, connected by a gynglimoid motion with a cranked shaft. Mr. Siemens does not comprehend the difficulty of attaining perfect exhaustion, or at least his apparatus does not even incidentally embody its requirements, nor meet its difficulties.

The obstacle to the achievement of perfect vacuum by dynamic exhaustion consists in this—That air of high rarity is incompetent to overcome the *vis inertia* of the exhaust valves, coupled with the faculty inherent in the small volume of air which remains undischarged, between the two exhaust valves and within the two unappropriated piston cavities and valvular conduits, dilating and presenting an additional obstacle to the play of the exhaust and vacuum valves.

These objections are met in my ram plunger-pump, by the play of fluid mercury on both superficies of the ram, in its contact with the plunger as well as with the main barrel; besides which (and perceptible by a little reflection), as the plunger and ram are alternately home to the very extremities of their respective working cavities; and when the ram is making its up stroke to transfuse the rarefied air of the main barrel within the

axial cavity of the plunger, the middle valve, nicely balanced on its seat, and buoyed up by the interstitial mercury, is compelled to open upon the retirement of the mercury, and a less degree of rarefaction being in the main barrel than in the plunger cavity, where subsists besides all the conditions (dynamically speaking) of perfect vacuum.

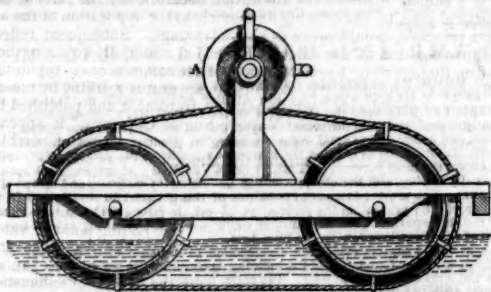
Mr. Siemens's pump has five necessary valves—mine but three, and therewith performs the double function of an exhausting and condensing pump. The former pump has two pistons with, mine two plungers without, the friction of packing. Two barrels and two stuffing-boxes in common with mine; and, as Prof. Graham, in his report to the Western Gas-Light Company in 1845, gave it as his opinion, "that this ram and plunger pump was a nonsensical fumble, and its author a mere sniggerer," what, in the name of Scotch consistency, would the professor deem this, it's doubly complex deontology?

W. RADLEY, Ch. E.
Groves Street Offices, Threadneedle-st., May 15.

STEAM NAVIGATION—MARINE LOCOMOTIVE.

Sir.—I perceive, in your Journal of last week, that a correspondent (Mr. John De la Haye, of Liverpool), suggests what he calls a "marine locomotive" as a substitute for the present form of our steam-vessels. He assumes that, with the present vessels, "steam navigation has not answered the expectations which had been entertained respecting it; the expense being very great, considering the limited speed hitherto attained." This he attributes to the form of the vessel, which he terms "an elegantly shaped raft, with a water-wheel whirling on each side." I gather from his proposed remedy, as much as from the words of his letter, that he considers the friction of water against the vessel's bottom and sides, as she moves along, is the cause of the alleged inefficiency of steam-vessels; and his suggestion is, that steam-vessels should consist of a platform, resting on the axes of hollow, and therefore floating, spheres, connected by such axes, so that he conceives as these spheres would roll over the water, instead of sliding, or, as he calls it, "cutting through it," we should have a great reduction of the power necessary to propel the vessel.

I beg to inform you that, when about 20 years of age, I tried a very similar experiment, and with much the same object in view as Mr. De la Haye. My vessel consisted of two empty casks, to the ends of which axes were attached, and these carried a platform, as in the subjoined diagram:—



A, is a pulley, having a handle on each side small floats affixed on the staves, and an endless rope being carried round the pulley and casks, and the paddles being omitted at the bilges to allow the ropes to embrace the casks. With this vessel a young companion and myself crossed the Tyne, at a very slow speed and with great labour to ourselves. I may just add, that the experiment might have ended in a catastrophe; for our rolling boat, being too heavy, upset in deep water, and my friend, who could not swim, had a narrow escape of being drowned.

I may state that this experiment proved nothing, for my buoyant rollers were not sufficiently large to counter the weight of two persons and the platform; but I will show the error into which I fell, and which I wish to prove attaches to the system. According to Beaufoy, the friction of water running over smooth surfaces in the direction of their length is so exceedingly small, as to have been very difficult of appreciation, being not more (quoting from memory) than one-half per cent. on the average of his experiments. Subsequent experiments on large vessels prove that by increasing the length of the parallel parts of a vessel, and loading her with the same immersed midship section as before her alteration, the speed of the vessel has been found to remain unaltered by the prolongation. If, therefore, mere friction of surface is not the consumer of the power in steam transit, it must evidently be due to the absolute displacement of the water, by the vessel pushing it aside in her progress.

This being the case, let us consider what would be the effect of carrying a platform on four buoyant spheres. It is evident that in a vessel as at present constructed, we have but one displacement—that is to say, that of the largest immersed section. It is evident, also, that on the easy flow of the water to and from the midship section, depends the relative ease with which the vessel is propelled; and hence the greatest part of the improvement in the speed of our later steamers has been principally due to the prolongation of the bow, which is, in fact, the insertion of a sharper wedge to separate the fluid, and to the prolongation of the stern, which causes the returning water, after being separated by the bow, to act upon the after wedge, and produce what is technically called "minus pressure"—a very essential auxiliary in economically propelling the vessel, by availing of a force arising from the recoil, or reaction, of the divided water—the loss of which would otherwise produce so much loss of power. We see, then, that as friction of surface forms no appreciable element in the resisting forces, the prolonged form at present adopted is not only necessary for economical propulsion, but that every inch of such prolongation decreases the resistance, by giving greater buoyancy, and thus reducing the immersed midship section.

Now, if we take a vessel of 100 ft. long and 16 ft. beam, and her greatest immersion as a mean being 4 feet, equal to 64 feet (the greatest section of displacement), we should have a buoyant power capable of carrying about 80 tons, allowing one-half the cubical contents for the entrance and run. Let us now suppose a platform supported on four spheres, of say 20 feet diameter; such spheres, to be immersed to carry 80 tons, would each have an immersed midship section of 70 ft., or a total section of displacement equal to $70 \times 4 = 280$ feet—that is to say, upwards of four times that of a vessel of the above dimensions. Besides, the sphere would be a very bad form for dividing the water, being worse than the bluffest bows of our old colliers. I say nothing of the great width of such a vessel, nor the impossibility of hanging a platform and cabins, &c., on the axes, and all the other practical difficulties which must attend the plan.

London, May 16.

E. GALLOWAY, C.E.

STEAM NAVIGATION AND STEAM LOCOMOTION.

Sir.—In the common way of navigating the sea, whether by wind or steam, the work done is to displace a weight of water equal to that of the vessel and its cargo, the space the vessel moves, and in the time it continues in motion, excepting always the resistance of the air, with which it is needless to meddle at present. Thus a vessel weighing 100 tons, going from London-bridge to Gravesend at flood tide, or in still water, the work is equal to removing 100 tons of water from Gravesend to London-bridge, the power in demand for which varies according to a certain law, which need not be "enunciated," as said by the learned.

Mr. De la Haye has proposed to substitute a globe to roll over the water, instead of cutting through it in the common way. We are in an age wherein genius is stretched in every direction to improve the art of locomotion, and I will not cry down in its incipience whatever might tend to annihilate space; but still we may cast an eye on the pence to be disbursed; in reference to which—let the sphere be supposed 100 feet in diameter, and its cubic content will be 523,600 feet. The water displaced, when one-sixth of its diameter is immersed, will be

$1000 \text{ tons for the gross weight of vessel, engine, coal, and cargo. The superficies of the sphere will be } 15,708 \text{ feet, and, if of copper, should not be less than } \frac{1}{4} \text{ inch in thickness, or in weight about } 20 \text{ lbs. per foot, which at } 1 \text{ s. 6d. only per lb., the cost of the shell is } 23,562 \text{ l.}$

But to annihilate space we must annihilate time. Let the speed be taken at 70 ft. per second, or about 48 miles an hour, and allowing the proper resistance of the atmosphere to a sphere, as compared with a flat surface, the power required to master it in the case taken is—

$11,207 \times 70 \times 60 \times 7854 = 2800 \text{ horses, whence the weight of the globe, engine, coal, and vessel being reckoned, so little would be left for beneficial cargo, that high speeds would not pay. At equal speeds by the present and proposed method of locomotion, taking the quantities immersed}$

the same both in form and bulk, the work to be done in the first case, as compared with the last-mentioned, would be in favour of the latter about 840

$135 = 62\frac{1}{2}$ to 1, if the air were constantly at rest; but the usual ship employed to navigate the waters is greater in length than in breadth, so that the water is easily divided, and as the wind has had its commands, which it means to obey, it will be more profitable both to time and pocket to keep the beaten track, and cut through the water in the present fashion, than to roll over it on mighty spheres.—JOHN CURR: Upper Penton-st., May 12.

THE WATER PRESSURE ENGINE.

Sir.—You have very correctly answered, in your Notices to Correspondents, the "North Briton's" inquiry, as to the power required to do the work given—viz.: that 89 horses of genuine old-fashioned Boulton and Watt effective strength would be the sum in case the moving agent were steam; what it would be by modern indicator diagrammatic measurement I pass over, for the reason that neither I, nor any one else, can answer the question, unless the machine be made, when it would be a day out of time.

Steam power differs from water power exactly as 2 to 1 (in the case given), when the very utmost is made of the latter; but the data provided by the "North Briton" is so over abundant, that little is left for the skill of the mechanic, or little room for advice, unless it be that he should rest on his arms, and reflect what data should be given and what curtailed.

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when that of the pump is 10 feet—so that the two pressures be in static equilibrium; therefore, a stroke between 56 and 112 ft. would be required to do the work, which, not being likely to be put in practice, it is needless to count what water would be required. I do not wish to press too hard on your correspondent, for he is only a fair sample (and, perhaps, from the mountains) of present civil engineering science.

Upper Penton-street, May 16.

JOHN CURR.

NEW MOTIVE-POWER.

Sir.—Your talented correspondent, Count Werdinsky, seems to possess no slight advantage over his antagonists, for he founds his argument upon the actual results which he has obtained; whilst some of his opponents have built their objections upon the shifting quicksand of chemical analysis. He has well exposed the fallacious and incongruous results which are obtained and recorded by chemists as matters of fact, or as scientific truths, laid down and established by a strict identity obtained in each result; whereas not only with pyroxyline, but with innumerable other compounds, no two analyses are found to correspond.

Suppose that Count Werdinsky's jury of 12 chemists were to determine that the formula of M. Pelouze is the only correct one given for pyroxyline, then its composition will be—

Carbon	96.66	Oxygen	50.28
Hydrogen	3.70	Nitrogen	10.36=100.00.

Now, the analysis of gunpowder by a celebrated chemist of the present day gives for its composition—

Carbon	14.400	Nitrogen	10.950
Hydrogen123	Potassa	35.150
Oxygen	80.777	Sulphur	10.000=100.000.

The absolute quantities of nitrogen then in pyroxyline, and in Waltham Abbey gunpowder, are respectively 10.36 and 10.55 in every 100 parts of each; there is, therefore, a trifling excess of nitrogen contained in the gunpowder over the amount of that gas combined with pyroxyline. Will the opponents of Count Werdinsky now explain why the corrosive nitrous acid gas should be generated by the explosion of gun-cotton; and why it should not be generated by the ignition of gunpowder? Are they prepared to investigate the affinities of these various component substances for each other at the temperature of their instantaneous explosion, and to show that, from the nature and electric force of these affinities, nitrous acid gas shall in the former case be generated, but not in the latter? If they are thus prepared, they may attack Count Werdinsky's principles upon theoretical grounds with some prospect of success; but if the count finds that his pyroxyline does not corrode the sides of his cylinders, what are these fine spun theories good for? The count's exposure of the discrepancies of chemical analysis, in the case of pyroxyline, will now stand staring in the face of Mr. Horsley's stern truth and positive fact. According to the analyses of Ure and Pelouze, gunpowder actually yields more nitrogen than pyroxyline. Moreover, there is not a particle of carbon used in the manufacture of gunpowder which does not contain moisture, and, therefore, hydrogen; and gunpowder itself contains from 1 to 2 per cent. of water, and, therefore, hydrogen to some extent. Wherein, then, does the strangeness of the count's idea upon this point consist; and why should not the hydrogen be given off?

Mr. Craddock's objection upon the score of temperature seems to me very conclusive against the practicability of Count Werdinsky's invention—at least, in an economical point of view. Messrs. Hanssen and Curr appear to differ in their conclusions as widely as the chemists by whom pyroxyline has been analysed—probably because their reasonings are founded upon discordant data; literally data, for no part of them is proved.

After all, it does not appear that Count Werdinsky's invention is less worthy of public attention than was that of the now effete electro light. It needed no prophet to foretell the finale of the latter; and perhaps there are some who can already foresee a similar issue to these wonders in locomotion. John Bull has, however, always upon hand a large, and apparently inexhaustible, stock of credulity, except when any real and substantial improvement, or discovery, is laid before him, in which case he immediately betakes himself to his impenetrable armour of stolid unbelief. We have in this eventful year witnessed many strange projects brought to light—road locomotives and timber tracks to supersede railways and their engines; electro light, to annihilate coal-gas in our streets, and to light our colliers to their work; ships upon wheels, manned with crimples (if the phrase be not an Irishism); gold from bar-iron, and from certain hedge-podge mixtures, left to ferment for years to bring about projection; locomotion without steam, fuel, or machinery; and, lastly, marine locomotion by means of great iron spheres, or barrels, revolving about their axes in the water—a scheme which will certainly make the originator a butt for the "eminent engineers." As there is no absurdity too glaring to be broached for the grave consideration of learned bodies, I conclude, that your able correspondent, Mr. De la Haye, has been amusing himself a little at the expense of the Liverpool Polytechnic. The facility of steering such a preposterous machine, and the trifling resistance of the air to the monstrous globes immersed only one-sixth of their diameter, were points which ought to have been duly dwelt upon.

Coleford, May 14.

R. MUSHET.

IRON STEAM-SHIPS AS VESSELS OF WAR.

RESPECTED FRIEND.—I am quite ready to agree with "J. H. S. C." that the experiments which have been made with iron war steamers are not of a nature to lead to the conclusion that the matter is definitively set at rest. My remarks were not meant either as an assertion or a prediction. I merely stated the fact of their having been condemned by individuals who are supposed to possess some knowledge on the subject; but, of course, those who have interested themselves in it will not be satisfied that they are in the right, on the mere probability of such being the case; and as the subject is one of considerable importance, I may be excused for offering a few remarks on his letter—not with the view of maintaining that modern inventions are not applicable to purposes of warfare, but simply to enter into an examination of the causes which have rendered iron vessels unfit for such a purpose, and to inquire whether there is any probability of surmounting the obstacles which have prevented their adoption as agents of destruction. The experiments made at Portsmouth with the *Ruby* steamer, cannot, of course, be considered of any importance whatever; but I question whether the experimental trip of the *Venezia* to China is much more conclusive, as that vessel was principally employed in destroying the war junks, by sending a Congreve rocket through the stern of each—a work of extermination rather than of ordinary warfare, as the vessel was sent into activity by the first explosion; and if we must credit the statements made with respect to the Chinese and their artillery, the shots which they could send would have about as much effect on an English-bell vessel, whether of wood or iron, as a broadside of Dutch cheese on a sandbank; but with the steamer employed in the South American affair, the result might be considered more conclusive—at least, it was considered altogether so at the time—the sailors having been reported to have promised themselves not to enter another iron ship of war, on the grounds that the iron splinters were more dangerous than shot. This is the only case worth recording as a practical test; and an imperfect one it was, no doubt, according to the statement of "H. G. S. C." as the vessel was constructed for preserving, rather than destroying, life. The officers, it appears, found the iron as brittle as glass; and, judging that "those who live in glass houses should not throw stones," retreated from the action. "H. G. S. C." however, points out a remedy which may enable the assailers to find shelter from the attacks of the assailed

the great desideratum which both parties try to find out. He proposes a net work of iron, placed on edge; but may I be permitted to ask him whether this would prevent the shots from passing through the vessel? If so, iron vessels would soon supersede those built of oak; for heavy shot, when fired point blank, will pass through thick oak planks as though they encountered nothing harder than a drizzle of butter; but if the arrangement proposed would not prevent their penetrating, and that the only difference would be that a stronger power would be required to shatter the iron, would the danger caused by the iron splinters be removed? Another question is, would it be possible to plug the vessel, should the shot penetrate below the water line? I ask these questions merely with the view of placing the affair in the light in which I have seen it, and expecting that "H. G. S. C." will further give the public the benefit of his opinion, as he has studied the subject. But, now, as to the cause of iron being shattered by cannon balls, there is nothing very astonishing in it, as it possesses no repelling power; and toughness, not brittleness, is required to withstand sudden shocks. A cannon ball, on being fired against a large mass of India-rubber, has been shattered to fragments. This may at first appear inexplicable; and indeed many persons consider such a phenomenon as mysterious, as to conclude by denying the truth of the statement, although given on the highest authority (Chambers); yet nothing can be more simple than the explanation of this apparent mystery. The impelling and repelling power are suddenly exerted at the same moment, causing a change in the structure of the substance acted upon; the power acts as an impelling power; the ball penetrates deep in the India-rubber, which, by its elasticity, repels it at the same instant, shattering it as effectually as if tremendous blow had been applied on each side with a steam hammer. On the same principle we can break a flint, by grasping it firmly in the hand, and applying a sharp blow on it with a small hammer—the force of the muscles of the hand and arm furnishing a repelling power equal to that imparted by the hammer in the opposite direction. But if, instead of this, we place the flint on a thin sheet of iron, and apply several sharp blows on it, the probability is that it will not be injured, while the iron will be either bent or broken. This is precisely what takes place when a ball strikes an iron vessel. It is the iron which is injured, and not the ball, simply because the iron cannot repel it in a contrary direction to that in which it was impelled.

Now, if a network of iron is placed around the vessel as proposed, the repelling power will be increased; but this appears to me to be simply an arrangement for obtaining increased strength, and not a plan to prevent the balls penetrating at all, or for counteracting the effects produced by their sudden admission. I would even suppose that the greater resistance offered to the progress of shot, the more disastrous would be the result, as the shot would enter, after repeated blows, giving the terrible knowledge of shattering a large surface of iron into minute splinters—repeated blows increase the brittleness of iron, and render it easier to break by the next blow it may receive. We must not, therefore, confound a resisting with a repelling power. Iron, wood, stone, and earth, possess the former to a great extent—while the latter property is possessed by very few substances; but I do not mean to infer that a powerfully repelling substance would be of much use in the construction of war vessels; for if a vessel was covered with India-rubber, 2 ft. thick—a rather expensive plan, by the way—it would prevent the shot from penetrating during a considerable time; but the effect of the concussion would be to dislocate the whole building, as the effect of the blows would be disturbed on the whole surface, which is not the case with timber vessels; for the shock is not felt much beyond the place which has been perforated by the shot.

As regards the superiority of iron in the construction of ocean steamers, there can be but one opinion; and it is greatly to be regretted the fleet of steamers which cross the Atlantic are constructed with timber; it is probable that it is simply because it was supposed that the cost of iron would be too great; if so, the sooner the Admiralty remove these restrictions the better; for if iron vessels cannot be used for purposes of warfare, much less would steamers answer; for a shot passing through a steam-blower would produce more disastrous results than the distribution of iron splinters; and, according to Sir Charles Napier, the sailor engages to encounter swords and shot, but he does not bargain to be cooked.

I think that men of science will see that the possibility of using iron vessels for purposes of warfare is a question which cannot be easily decided. I do not profess to possess any knowledge on the subject. I merely offer the above remarks as suggestions as to the difficulties which have to be encountered before they can be available as agents of destruction; and whether there are any insurmountable obstacles is not a question for me to decide. But whatever may be the decision of scientific men on the subject, it is to be hoped that it will not lead the Admiralty to compel the companies to build their vessels of timber, as it is generally admitted that the destruction of an iron vessel at sea, by the mere force of the waves, is almost an impossibility. JOHN DE LA HAYE.

IMPROVED BUFFERS AND BREAKS.—Mr. John Lane, of Liverpool, has just completed an ingenious arrangement of breaks and buffers for railway carriages, of his invention—some experiments on which have been highly satisfactory. The first operation was to show the powerful and immediate effect of the new breaks, or stoppers, which, by a mere pull at a lever handle, so effectually locked a pair of wheels in each carriage, that from a high speed they came to an almost instantaneous pause. In the absence of diagrams, we can but state that this break locks simultaneously the wheels of all the carriages that may follow the first, by means of an ingenious continuation or arrangement of piston-rods, springs, and other machinery—all simple in construction, and, consequently, not liable to be thrown out of order. The break itself, when in operation, clips round a drum in the middle of the axle-tree of the two wheels in each carriage to be stopped. All is placed under the carriage bodies, and the single operation of pulling the break handle in front effects the individual stoppage, in like manner, of every carriage in the train, so that there is no over-ruling of any one pair of the wheels. The buffer consists of a cylinder and piston working through a stuffing-box, the piston-rod carrying at its terminus the buffer-head. The cylinder is filled with water, and is connected by a small tube with another cylinder containing air, and above it; on the buffer striking any object, the water is forced up into the air cylinder, and, by the elasticity of the air, acted on by the water, the engine and train are arrested without injury, and the ease and absence of shock on the rebound was truly surprising. A strong baulk of timber was fixed in the angle of the wall which formed the terminus of the temporary railway, and the mounted passengers, after being whirled along as if to be dashed against the wall, received only a gentle shake, without being unseated, and receded gently backwards with the machines. Both inventions appear of considerable utility.

NEW COUPLING GRAPES—IMPORTANT TO RAILWAY COMPANIES.—An invention of considerable importance has been brought out by Messrs. Crawford and Grew, the former gentleman being the superintendent of the locomotive department, and the latter the station master at Rugby. The object of the invention is to supersede the present system of attaching and detaching railway carriages, and is called the "double ratchet cramp." The utility of such an invention will be obvious to every one in the habit of travelling by railway, when they contrast it with the present crude mode. The links by which the carriages are fastened together are so constructed as to prevent any play or freedom between them, further than that allowed by the buffer-springs, so that the unpleasant jolting and frequent collision of passengers' heads, upon a sudden check taking place, to which they are at present subjected, is completely avoided, whilst the delay caused by uncoupling or coupling carriages at different stations is lessened in a very material degree; besides which the risk of accidents and danger to human life is altogether avoided, the process being carried out without the necessity of going between the carriages—a duty that has frequently led to the loss of a finger, a hand, and sometimes even loss of life, the carriages being forced together before the porter could get from between them, and he has, consequently, been crushed between the buffers. Experiments have been made with the cramp on the London and North-Western line, in presence of Mr. McConnell and several other engineers, when those gentlemen expressed their high approbation of the invention, and their perfect satisfaction at the manner in which it worked, Mr. McConnell intimating that he should recommend its immediate adoption to the directors of the London and North-Western Railway; in addition to which Mr. McConnell, as well as the other gentlemen, highly complimented Messrs. Crawford and Grew upon the ingenuity they had displayed in carrying out so useful and important an invention. The cramp consists of nothing more than two trucks or hoops, connected by what is termed a right and left-handed screw, the peculiarity of which is, that, by turning it in one direction the links are drawn closer together, and by turning it in the other, they are extended. It is worked by an ingeniously constructed toothed wheel, fixed to the middle of the screw, about which a lever is provided, with a click and spring, for the purpose of taking hold of the wheel, in which it is allowed to traverse. All the room required for the action of the cramp will be about 7 inches for the traversing of the lever. The cramp, when being used, is hooked to the side chains of the carriages, and, by its action, the buffers are compressed, the carriages drawn nearer together, and the connecting link is removed or attached with remarkable ease and considerable saving of time. Messrs. Crawford and Grew have taken out a patent for the invention, and we have no doubt that, from the ease and simplicity with which it may be worked, and the important advantages attending its use, every railway company will avail themselves of it, and apply it to their carriages as quickly as they can get supplied with it; the saving in the wear and tear of carriages, as compared with the present system, being very material.—*Birmingham Journal*.

IMPROVED COTTON CLEANING ENGINE.—Mr. Burn, of Edinburgh, has invented a machine for cleaning cotton from the seed, which is likely to prove of great importance to the cotton trade. By the use of the old saw-gin, the staple was so cut and torn about in every direction that it was necessary to abandon it. Mr. Burn's invention is exceedingly simple, not only relieves the staple of the seed, but preserves it pure and fit for every purpose of the mill. It is, we believe, patented; but we are not aware of the details of the machine.

KENNE'S MARBLE CEMENT.—This cement, which has been in use for some time, is composed of gypsum and alum; these are incorporated at a great heat, when an intimate combination takes place; when mixed it is very hard, and not one-third the expense of Portland cement. It is of two kinds—fine and coarse; the fine quality is pure white, and susceptible of as high a polish as marble. Incorporated with colours to form scagliola, the imitation of variegated marble is effected with great certainty; and, from the facility with which one colour is laid with another, very beautiful mosaic work, for tables and architectural decoration, can be produced. The coarse is available for stucco, in situations where peculiar strength and durability are desired; it is adopted in place of wood for skirting, architrave, and panel mouldings, with other internal fittings, at a much less cost. Buildings so stuccoed are, to a great extent, fire-proof, and unassailable by vermin or dry-rot. It is used in the proportions of two gallons of water to one bushel of cement; in cases where it has to be used on brickwork, it is recommended to lay first a coat of Portland cement to resist the damp. The process of setting and hardening is gradual, in summer taking two or three hours, in winter double that time. Several specimens of the scagliola that we have examined are imitated with a correctness approaching to nature.

PREVENTION BETTER THAN A CURE.—RAILWAY COMPANIES, OWNERS AND PROPRIETORS OF STEAM MACHINERY IN GENERAL ARE RESPECTFULLY INFORMED, THAT THE ONLY INFALLIBLE METHOD OF PREVENTING BOILER INCURSTATIONS

is that lately PATENTED by Mr. HORSLEY, which, while it effects a considerable saving of time, fuel, wear and tear of machinery, tends greatly to DIMINISH, if not altogether to PREVENT, the POSSIBILITY OF EXPLOSIONS.—No destructive ammoniacal or other salt is introduced into the boiler.

As this Patent embraces a field of so extensive a character, applying equally to Water Companies and Manufacturers, it is the intention of the proprietors to FORM a COMPANY, so soon as a sufficient number of individuals can be got together.

For further particulars and prospectuses, apply to Mr. Horsley, Ryde, Isle of Wight; or Mr. Campin, Patent Office, 210, Strand; or the office of the *Mining Journal*, No. 26, Fleet-street, London.

WORKING RAILWAYS BY CONTRACT.—(Including Maintenance of Way).—This subject which has lately attracted much attention in the public prints, as well as privately, in railway circles, has induced some gentlemen of practical acquaintance with the details of the working of railways to form themselves into a company, for the purpose of carrying out the necessary arrangements with railway companies who may feel disposed to entertain the subject.

As it is fully intended to confine the number of shareholders as much as possible to those parties whose profession and habits have enabled them to gain experience in the object for which the company is proposed to be established, the particular attention of Engineers and Contractors is respectfully solicited to this announcement.

Further particulars may be had on applying by letter, from principals only, to the undersigned.

H. B. WATSON, late of Leeds.

Matlock, May 9, 1849.

ABERDEEN RAILWAY COMPANY.—Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of the ABERDEEN RAILWAY COMPANY will be HELD within the Royal Hotel, Aberdeen, on Thursday, the 31st day of May current, at One o'clock in the afternoon, to empower the directors to raise, on loan, the sum authorised to be borrowed under the "Aberdeen Railway Act, 1848."

By order, JAMES HAY, Chairman. GEO. REITH, Secretary.

Railway Office, Aberdeen, May 15, 1849.

RIDER'S RAILWAY BRIDGE.—This BRIDGE, BUILT wholly of IRON, will be ERECTED by the PATENTEE on the following terms:

A BRIDGE, of 150 span, for a double track railway, broad gauge—Price £2000.

A BRIDGE, of 100 feet span, same dimensions—Price £1000.

These prices are exclusive of abutments or piers.

ROADWAY BRIDGES at a reduction on cost of from one-half to two-thirds.

Apply to Mr. S. MOUNTON, Patentee, Bradford, Wilts, or to Mr. Howard Jacobson, Suffolk-lane, St. Paul's, London.

CUNNINGHAM AND CARTER'S NEW SYSTEM OF RAILWAY PROPULSION.—Railway Directors, Engineers, and the public generally, are invited to examine this system, which may be VIEWED on Mondays, Wednesdays, and Saturdays, from half past Eleven to Three o'clock, at Ingram's Manufactory, 29, CITY-ROAD, near Finsbury-square.

The following is an estimate of the daily expense of working a double line of 50 miles long, during a period of 10 hours, with trains starting from each terminus every half hour—

—Six trains always running on the line—	
Coal for five stationary engines, of 100-horse power each, at 5 lbs. per horse-power per hour each (say, 11 tons, at 14s. per ton)	£ 7 14 0
Wages—Engineers, with relief, 10 at 6s.	£ 3 0 0
" Stokers, ditto 10 at 4s.	2 0 0
" Cleaners, ditto 10 at 2s. 6d.	1 5 0
" Drivers, ditto 12 at 5s.	3 0 0
" Guards, ditto 12 at 3s.	3 0 0
Twenty men stationed on the line, 3s.	3 0 0
Repairs of engines, with depreciation, &c., at £200 per annum, each X 5=1000.	2 15 0
Contingencies	4 6 0
Total	£30 0 0

Forty trains, at 15s. per train=£60, being a fraction over 3d. per train per mile, independent of a saving of one-third of the present expense in the maintenance of way.

CWMBRAIN PATENT IRON REFINERY.—The PROPRIETORS OF IRON FORGES AND MILLS are respectfully INVITED to MAKE TRIAL OF MR. BLEWITT'S REFINED IRON, OR METAL, PREPARED by a NEW PATENT PROCESS, whereby the IRON is completely FREED from the IMPURITIES CONTRACTED in the BLAST-FURNACE, and, by judicious mixture, rendered applicable to every kind of manufacture. Heretofore, the metal usually sold in the market has been produced from the worst pig, scrap, and refuse of some particular blast-furnace, or set of furnaces, without any mixture, or any regard to quality, or the purpose for which it might be required. The PATENT METAL IS PREPARED ON SYSTEM, and TO ORDER, for any of the following purposes:—

1. For BOILER and TANK PLATES.
2. For TIN-PLATE, commonly called COKE-PLATES.
3. For STRONG CABLE BOLTS, RIVET, and ANGLE IRON.
4. This COMPOUND PUDDLED, beat under the hammer into a bloom, reheated, and rolled into a 6 or 6½-inch bar, makes TOPS and BOTTOMS for FLANCH and OTHER RAILS, of very superior quality, and attended with less waste than any other kind of iron used for that purpose. It is also well adapted for nail-roads, horse-shoes, and for other ordinary uses of the blacksmith.

The PATENT METAL is marked with a squirrel, and the initials "R. J. B.," and is to be had only at the "Cwmbrain Iron-Works," near Newport, Monmouthshire

PATENT TOUGHENED CAST-IRON.—Messrs. GARDEN and MACANDREW beg to call the attention of Architects, Builders, Engineers, Ironfounders, &c., to the ABOVE DESCRIPTION OF IRON (Mr. Morris Stirling's Patent), which, after numerous trials, experimental and practical, is found greatly to exceed all other cast-iron in tensile and transverse strength, as well as in resistance to crushing forces. Several of the most extensive ironmasters have been licensed, and from them, or their brokers, the patent iron can be procured.

Messrs. GARDEN and MACANDREW have always a STOCK of this IRON in PIGS, and are ready to EXECUTE ORDERS to ANY EXTENT, on the shortest notice.

27, Queen-street, Cheapside, April 25, 1849.

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Author of *Chemical Manipulation and Analysis*, &c.

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London: George Knight and Sons, Foster-lane.

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The attention of teachers is specially requested to this admirable little treatise—at one-fourth of the price of any other complete book on the subject; it gives us all that is necessary to initiate the student into a thorough knowledge of the science. At the suggestion of several teachers, who have adopted it as their class-book, it is now strongly bound in leather.

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"In no department of science or literature have we met a more truly useful manual than this little volume."—*Athenaeum*.

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All the leading journals in the kingdom have spoken favourably of this invaluable process, now adopted in most of the infirmaries, asylums, public institutions, and families throughout the kingdom.

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Quantity of air passed through a Mine almost unlimited, to the extent of 300,000 cubic feet per minute, if necessary—depending on size of apparatus.

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The ventilator has been erected at the Eaglesham Colliery, near Neath, and is perfectly efficient, and may be viewed on application to the proprietors, Messrs. Penrose and Evans, Neath.

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beg to inform Mine Agents, Contractors, and Merchants, that having completed their Machinery for the MANUFACTURE of the ABOVE ARTICLE, they are enabled to offer FUSE of a very superior quality, and at considerably reduced prices.

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We, the undersigned, hereby bear our testimony to the excellence of the Safety Fuse, manufactured by Messrs. Brunton and Co. We have had it in use in our mines; and, after sufficient trial, find it to be fully equal to any Fuse we have ever used:—

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Invaluable as a COATING for SHIPS' SIDES and BOTTOMS, all kinds of WOOD or METAL WORK, roofing, leaks, roofs, spouts and gutters, porcs, sheds, railing, and all kinds of out-work, and being perfectly waterproof, will preserve their surfaces from monerous influence and decay—requires no preparation, and will dry in a few hours.—Sold in casks, 2 to 50 gallons. Brilliant black, 2s.; rich brown, 2s. 9d. per gallon.

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PATENT ALKALI COMPANY'S METALLIC PAINTS. COLOURS—BLACK AND PURPLE BROWN.

These paints (the products of a patent process), possess peculiar and valuable properties not otherwise attainable, and are perfectly free from the deleterious qualities of white-lead. They surpass all other paints yet discovered in point of DURABILITY and ECONOMY; two coats being more than equal to three of any other description. From their chemical composition, they are pre-eminently adapted for covering IRON; and STUCCO or BRICK BUILDINGS, and every kind of WOOD WORK. The process by which the base of these paints is produced, makes it impossible that any change should take place in their composition from atmospheric influence. Their identity with iron secures them from galvanic action, so fatal to the durability of lead and other paints on iron work.

They have been exposed on SHIPPING to the action of sea water, and of the sulphuretted hydrogen so prevalent in sea ports and tidal harbours, for more than THREE YEARS, without change.

Their CHEAPNESS and STRENGTH render them peculiarly eligible for IRON BRIDGES, ROOFS, and RAILINGS, FARM BUILDINGS, and SHIPPING.

The attention of the SHIPPING INTEREST is particularly directed to the company's patent compound metallic BLACK PAINT (the only metallic black paint of any value in existence), which will be found to act as a most valuable preservative when applied to iron steam-boats, and wooden vessels. It also forms a beautiful covering for STOVES, and is susceptible of a high polish.

Several imitations of the Patent Alkali Company's paint having been sold under the name of IRON PAINT, the directors of the company deem it necessary to caution the public that no other iron paint is genuine, or partakes in any degree whatever of the properties of the company's paints, the base of the latter being obtained solely by a series of processes, which are protected by the company's patents, and to which alone is owing their extraordinary body, or covering power. Numerous and most satisfactory testimonials have been forwarded to the company's offices, copies of which may be had of the secretary or of the agents.

Price, by the ton, £25, delivered in London or Liverpool, exclusive of packages.

To be obtained exclusively on application to the Secretary, Mr. J. A. West, at the offices of the company, 30, Fenchurch-street, London; or of any of the undermentioned parties, who are the only agents of the company:—

Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Messrs. Clarke and Fild, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Vint and Co.; Newcastle-on-Tyne; and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox, Tregodra, near Falmouth.

PORTER'S PATENT CORRUGATED IRON BEAMS, GIRDERS, AND FIRE-PROOF FLOORS.—These BEAMS and GIRDERS are about 30 per cent. lighter, and 20 per cent. cheaper, than any others of wrought-iron.—The FIRE-PROOF FLOORS, although not more costly than those of cast-iron, with brick arches and concrete, give greater security from fire, with less than one-tenth of the weight.—MANUFACTURED BY IRON BUILDING & ROOFING WORKS, SOUTHWARK. OFFICE—3, ADELAIDE-PLACE, LONDON-BRIDGE, CITY.

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DENT'S PATENT DIPLIED SCOP or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

IMPORTANT TO MINE OWNERS, &c. GUTTA PERCHA COMPANY—PATENTEES, CITY-ROAD, LONDON.

The GUTTA PERCHA COMPANY beg to bring under the notice of Mine Owners, Manufacturers, &c., the GREAT SAVING, both of time and expense, which is effected by the use of the GUTTA PERCHA PUMP BUCKETS and VALVES. These Buckets may be had of any size or thickness, without any seam or raised joint. They are unaffected by acids, alkalies, &c. Cold water will never soften them, and they are, consequently, much more durable than leather, and also cheaper. The most gratifying testimonials have been received from millowners, who have had these Buckets in operation for several months past, without the slightest repairs being required.

GUTTA PERCHA TUBING.

Being so remarkable a CONDUCTOR OF SOUND, is now being extensively applied for CONVEYING MESSAGES from ONE BUILDING, or PLACE, to ANOTHER. If a Tubing of this material, 1 inch diameter, be carried from the mouth of a mine, or pit, down the shaft, to various parts of the mine (no matter whether a quarter or half a mile distant), an instant communication may be established by means of the whistle, on Whistling a principle, and a conversation carried on as distinctly as though the parties were but a few feet from each other. When these Tubes are in general use, they will greatly lessen the loss of life in mines.

GUTTA PERCHA DRIVING BANDS.

Continue to secure a continually increasing demand; they can be had of any size or length. Their durability and strength, permanent contractility and uniformity of substance, their non-susceptibility of injury from contact with oils, grease, acids, alkalies, or water, and the facility with which the joint required can be made in bands of from 200 to 300 feet long, render them superior for almost all working purposes, and decidedly economical.

GUTTA PERCHA Soles for Boots and Shoes, Bowls, Buckets, Picture Frames, Brackets, Mouldings, Surgical Instruments, Vases, Cups, Inkstands, Bails, &c., may be had at the Company's Works, Wharf-road, City-road, London, or of any of their wholesale dealers in town or country.

DAMP AND GASEOUS EXHALATIONS. SANITARY MEASURES.

ALL MEMBERS OF BOARDS OF HEALTH are especially DIRECTED to the most EFFECTIVE MEANS which they can ADOPT TO PREVENT the injurious and often FATAL EFFECTS upon the HEALTH OF THE COMMUNITY, arising from exhalations that are produced from moisture, decayed animal matter (as in grave-yards), stagnant water, and collections of fetid refuse, tending to produce a miasmatic state of atmosphere. In situations so effected, the impervious quality of the ASPHALTE of SEYSSSEL renders it the most perfect PAVEMENT or COVERING that can be relied upon for hermetically closing, and thereby preventing the rising of moisture and escape of noxious vapours. The present extensive application of this material for covering roofs, terraces, and arches, for preventing the percolation of wet, is strong evidence of its effectiveness for the above purposes, which is further confirmed by the following extract from the Report of the Commissioners on the FINE Arts:—

"In 1839, I superintended the construction of a house of three stories on the Lac d'Engelhorn. The foundation of the building is constantly in water, about 19½ inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of SEYSSSEL ASPHALTE, less than half an inch thick, over which coarse sand was spread.

Since the above date, no trace of damp has shown itself round the walls of the lower story, which are for the most part painted in oil, of a grey stone colour. It is well known that the least moisture produces round spots, darker or lighter, on walls so painted. The pavement of the floor, resting on the soil itself, is only about 2½ in. above the external surface of the soil, and only 19½ in., at the utmost, above that of the sheet of water.

The layer of Asphalt having been broken and removed, for the purpose of inserting the skulls of two doors, spots indicating the presence of damp have been since remarked at the base of the door-posts."

* This method has been adopted at the new Houses of Parliament.

Seyssel Asphalt Company, Stangate, London. I. FARRELL, Secretary.

NEUBER'S SCENTED LIQUID GLUE, being perfectly transparent, is admirably ADAPTED FOR LADIES' FANCY WORK, &c.

In bottles, at 1s. each.

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NEUBER'S WASHABLE WATER VARNISH, for PAPER HANGING, &c., is without smell, and requires no preparation of size.—Best full bodied, 12s. per gallon; flat, 9s.; and in bottles at 1s. and 1s. 6d.

NEUBER'S IMPROVED SUPERIOR WHITE PAPER VARNISH, for MAPS, PLANS, &c.—14s. per gallon, and in bottles 1s. each.

NEUBER'S TRANSPARENT VARNISH FOR OIL PAINT, &c., is sold in bottles at 1s. each.

Naptha Polish, 14s. per gallon; Best Dark Oak Varnish, 10s.; Pale, 12s. per gallon.

Best French ditto, 21s. per ditto; Best Dark Carriage ditto, 13s.; Pale, 15s. per ditto.

Wholesale at the Patentee's, Varnish and Japan Manufacturer, 649, New Oxford-street, London.

Samples forwarded on receipt of 18 postage stamps.

Wholesale Agents—Low and Son, perfumers, 330, Strand; Hopwood and Parke, Fish-street-lane, London; P. Walker and Co., Jamaica-street, Glasgow, and 1, Duke-street, Leith; Robinson, Palmer, and Palmer, operative chemists, Colmore-row, Birmingham; W. Sims, Bath; F. Myers, Preston.

N.B.—Respectable local agents are required for the provinces.

THE SCIENCE OF WASHING.—"It is but common justice to state, that we have seen the mode invented by Mr. Twelvetroes, of Millman-street, Foundling Hospital (noticed in our paper a short time back), described by very many of our country contemporaries, from experience, as bearing out all Mr. Twelvetroes' professions. The experiment is so cheap and ready, that it is worth any good housewife's while to adopt it."—*Douglas Jerrold Newspaper*, March 21.

THE SCIENCE OF WASHING, by HARPER TWELVETREES, bookseller, price 2s. 6d., to be had of Kent and Richards, London, and all booksellers.

SIR JAMES MURRAY'S FLUID CAMPHOR.—This cordial preparation is infinitely more effective and uniform in its soothing and reviving influence than Camphor, either in substance or suspended in temporary or mechanical mixtures. This permanent solution is safe and agreeable to all; it raises the spirits, renovates the powers of life in low fevers, abates spasms, allays irritation of the stomach and nerves, and the best vehicle for tonics and sedatives in diarrhoea dysentery. As a warm restorative it is invaluable; and is of use in sea-sickness, fainting, and bilious complaints.

This ORIGINAL FLUID CAMPHOR (containing 3 grains of camphor to the ounce) is sold by the sole consignee, Mr. William Bailey, of North-street, Wolverhampton, and all wholesale and retail druggists and medical agents throughout the British Empire, in bottles, at 1s., 2s., 4s., and 8s. each, with directions for use.

Also, Sir JAMES MURRAY'S FLUID MAGNESIA, in bottles, at 1s., 2s., 6d., 3s., 6d., 5s., 6d., 11s., and 21s. each.

THE ACIDULATED SYRUP, in bottles, 2s. each.

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